



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

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IN REPLY REFER TO

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Dear Sir:

We are pleased to submit the attached final regional report on water bodies in the Northwest Region of Alaska. The report is designed to facilitate the BLM's endeavors to make navigability determinations in Alaska; to serve as a source document in reviewing the validity of past navigability determinations in the event that the legal standards of navigability change; to assist the BLM's and the State of Alaska's efforts in developing court test cases on navigability criteria; to inform the public on the information and rationales used by BLM in making navigability determinations; and finally, to make known to the public those water bodies already determined by the BLM to be navigable or nonnavigable.

Those familiar with some of BLM's previous reports may note that the one for the Northwest region follows a less elaborate format. Material such as that included in the Upper Yukon Regional Report and the draft Kuskokwim Regional Report is useful in navigability litigation, as well as for land management programs and controversies stemming from RS 2477. However, the primary reason for the regional reports is prompt and proper conveyance of land to the State and Native corporations. The format of the Northwest Regional Report better serves that purpose.

Many of the water bodies described are located on lands selected by or conveyed to NANA and Bering Straits Native Corporation and various village corporations under the Alaska Native Claims Settlement Act, and the State of Alaska under the Alaska Statehood Act. The BLM has made navigability determinations in this region on a township-by-township basis as the need arose in the land conveyance programs. On October 5, 1984, the BLM issued determinations of navigability for nine water bodies based on a draft of two of the chapters in this final report. The completion of the report permits the BLM to make additional navigability determinations.

Alaska Region Office

APR 22 '85

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In the next thirty days BLM will utilize the data contained in the final report, primarily that in the Appendix, to issue a second navigability memorandum for the Northwest Region. The Appendix summarizes the great majority of the Native allotment, Homesite, Headquarter site, and Trade and Manufacturing site records relevant to potentially navigable water bodies in the region. Examination of other such files and interviews with people knowledgeable about the region may result in a third set of determinations.

Sincerely yours,



Robert W. Arndorfer  
Deputy State Director for  
Conveyance Management

Enclosure:

Alaska's Northwest Region: A History

Identical letter to:

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**A L A S K A ' S  
N O R T H W E S T R E G I O N :**

**A History**

**By**

**James H. Ducker**

**Bureau of Land Management  
Anchorage, Alaska**

**1985**

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**A L A S K A ' S  
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## EDITOR'S INTRODUCTION

The U.S. Bureau of Land Management (BLM) is currently transferring title to about 145 million acres of land to the State of Alaska and Alaska Native corporations in compliance with the Alaska Statehood Act of 1958 and the Alaska Native Claims Settlement Act of 1971, respectively. A serious impediment to the conveyance of land title is the unknown acreage and location of nontidal navigable waters in Alaska.

By authority of the Statehood Act of 1958 and the Submerged Lands Act of 1953, the State of Alaska owns the beds of tidal waters and nontidal navigable waters unreserved as of the date of Statehood. Submerged land acreage of navigable waters unreserved as of the date of Statehood may not be charged against the State's entitlement under the Statehood Act. On the other hand, lands underlying nonnavigable waters as well as those submerged lands in a reserved status in 1959, remain in trust for the riparian owner or in the public domain.

During the 1960s, the BLM made determinations of navigability for water bodies on lands to be conveyed to the State. However, after the passage of the Alaska Native Claims Settlement Act and the subsequent promulgation of regulations requiring, among other things, the BLM to make navigability determinations for waterways on lands to be conveyed to the Native corporations and to account for the submerged land acreage, the State quickly asserted its claim to potentially navigable waters on ANCSA-selected lands by two methods. First, the State provided the BLM with its definition of navigable waterways and a set of maps known as Water Delineation Maps illustrating waterways on ANCSA-selected lands that the State considered to be navigable. Second, the State routinely notified Native corporations in the instance of a proposed conveyance that the BLM may be attempting to convey lands underlying navigable waters owned by the State since 1959. Well aware of the differences between the BLM and State definitions of navigability, and the State's position that these differences must one day be resolved by the courts, many corporations excluded in their selection applications most waterways identified by the State as navigable. Consequently, whenever the BLM made a determination of navigability contrary to the State's claim and charged the submerged land acreage to the corporation's land entitlement, the corporation was forced to appeal to the Alaska Native Claims Appeal Board for a ruling on the question whether the submerged lands were in fact Federal lands or State lands in 1959.

In the late 1970s, as the BLM prepared to resume land conveyances to the State and to accelerate conveyances to the Native corporations, the BLM and the State agreed that there was a need for more information about the physical character and history of waterways as routes of travel and transportation. This information would satisfy BLM's need to make timely determinations of navigability; and it would facilitate the BLM's and the State's need to develop test cases of navigability for the courts. Thus, in 1977, the BLM let a major contract to the University of Alaska to research pertinent information from the literature about Alaska waterways. Completing the project in early 1979, the contractor provided BLM with a great deal of valuable information about Alaskan water bodies, information that was and is used to support determinations of navigability in the land conveyance programs. However, the contractor provided insufficient information about many minor waterways, some of them located on lands to be conveyed to the State or the Native corporations. The need for additional documentary research and possibly field investigations was apparent.

In 1979, representatives of the BLM and the State of Alaska met several times to discuss and decide upon methods by which: 1) the BLM could make timely determinations of navigability in connection with the land conveyance programs; 2) the BLM and the State could reach agreement on what waterways were clearly navigable and nonnavigable under BLM and State criteria; and 3) the BLM and the State could identify water bodies that best reflect differences in the BLM's and the State's criteria of navigability for the purpose of litigation. The decisions that were made then are still valid today, although some have been modified as necessary to take into account unexpected developments.

The BLM and the State decided to simultaneously follow a two-pronged approach to the problem by making determinations for nontidal water bodies on a township-by-township basis as well as on a regional or subregional basis. This entailed the formation of three independent but interacting teams: one in the BLM State Office to make navigability recommendations in connection with the State and ANCSA land conveyance programs; the others in the BLM State Office and State Department of Natural Resources to prepare factual reports on waterways in a region or subregion. These highly detailed reports, based upon the best information available, are useful to the BLM in making recommendations for waterways on land to be conveyed to the Native corporations and the State. Once the final draft of the report has the approval of the State and other parties as a technically adequate document, the BLM will have the means to make reliable and consistent determinations for entire waterways. This in turn will give the State the opportunity to identify waterways that best illustrate differences in BLM and State criteria of navigability for development of test cases. As these differences are settled by the courts, the BLM and State criteria will eventually be the same. Whatever decisions are reached by the courts, the BLM will have a source document on which to rely in reviewing the validity of previous determinations in light of the court's decisions.

Alaska's Northwest Region is the third such report to be issued in final form by the BLM. James H. Ducker researched and wrote this history, benefiting considerably from the assistance of other members of the Navigability Section in compiling the Appendix. The report summarizes geographic knowledge about the region and its water bodies; traces the general history of its Native people, exploration, mining, hunting, fishing, and trapping activities, and communities; describes in detail the development of water transportation in the region; chronicles the process by which the BLM reached a determination of navigability for water bodies on lands selected and/or conveyed to the State or Native corporations, and summarizes relevant information contained in hundreds of land records. The BLM has already relied upon some of the information gathered by Dr. Ducker in making navigability determinations for water bodies on land to be conveyed.

C. Michael Brown  
Chief, Navigability Section

## INTRODUCTION

The Alaska Northwest has answered man's material needs in the context of both subsistence and market economies. Eskimo people took from its seas, streams, lakes, and land everything required to feed their families, build their homes, and clothe themselves against the Arctic cold. In the mid nineteenth century, whalers and traders came to the area to share in its natural wealth of whale and fur. By the turn of the century, gold lured a much larger Western population to the region. Since that time, the Northwest has continued to answer men's basic physical needs and has helped to enhance the lives of the region's residents.

Since 1959, the Alaska Statehood Act, the Alaska Native Claims Settlement Act (ANCSA), and the Alaska National Interest Lands Conservation Act (ANILCA), have dramatically altered the ownership of this land. Under its entitlement included in the Statehood Act, Alaska has selected large tracts of Federal-held land in the DeLong Mountains; the upper Ambler valley; the upper portions of the Kiwalik, Kugruk, and Koyuk drainages, and in the highlands of the western portion of the Seward Peninsula. Native selections are concentrated around the twenty-nine villages in the region. The villages, most of which are on the coast, range from Point Hope in the north to Stebbins and St. Michael in the south. The ANILCA has preserved fourteen million acres in National preserves, parks, and wildlife refuges. Most of the Noatak drainage is in the Noatak National Preserve which encompasses six and one-half million acres. The Kobuk Valley National Park is to its south; the Gates of the Arctic National Park and Preserve, which includes the extreme headwaters of the Noatak and Kobuk is on its eastern border; and the Cape Krusenstern National Monument, divided by thirty miles of Native- and State-selected land, is to the west. The more than two-million-acre Selawik National Refuge, encompassing the majority of the Selawik drainage, abuts the Kobuk Valley National Park. A slightly larger tract comprises the Bering Land Bridge National Preserve in the central and northwestern portions of the Seward Peninsula. Chamisso, St. Lawrence, Besboro, and Stuart islands as well as other coastal areas are in the Alaska Maritime National Wildlife Range. Finally, the Federal government has granted Wild and Scenic River status to portions of the Noatak, Kobuk, Salmon, Selawik, and Unalakleet rivers.

The history of the Northwest region is designed to furnish a body of information, broad enough in scope yet comprehensive enough in detail, to enable the Bureau of Land Management to make determinations of navigability with confidence. It draws on extensive, yet by no means exhaustive, research. The great majority of the relevant publications of the U.S. Geological Survey as well as some of the unpublished records have been examined. The various Nome newspapers of the gold rush era yielded some otherwise unavailable information. Manuscripts at the University of Alaska, Anchorage archives along with copies of many documents in Washington, D.C. and Seattle made by the Arctic Environmental Information and Data Center under contract to BLM, have contributed information to the report. The author has researched a variety of published work: accounts of early explorers, book- and article-length reminiscences, and numerous government reports. State and Native land selection files added valuable information. The Appendix to this report summarizes data culled from hundreds of Native Allotment, Headquarter Site, Homesite, and Trade and Manufacturing site files maintained by BLM.

The drafting of this report has been a collaborative process. The author wishes to thank C. Michael Brown for his uniformly useful suggestions of sources to examine and for his characteristically careful scrutiny of the manuscript. The Appendix was a product of all the members of the Navigability Section. Dot Tideman worked countless hours extracting the pertinent data. Later in the project Catherine Bayer, Sherman F. Berg, and Susan Eaton assisted Tideman. Finally, the word-processing staff in BLM's Alaska State Office once again proved its skill and patience in deciphering the authors' scrawl, correcting punctuation, and producing a finished product under short time constraints.

## CHAPTER ONE

### THE NORTHWEST ALASKA REGION

Alaska's Northwest Region contains 67,000 square miles, that is roughly twenty-two hundred townships or 42.9 million acres. It comprises over 11 percent of the State. From Cape Lisburne in the north to about a score of miles south of St. Michael, the region faces westward toward the frigid ocean. The Seward Peninsula, which juts westward toward Siberia, divides Kotzebue Sound of the Chukchi Sea from Norton Sound of the Bering Sea. The DeLong Mountains, part of the Brooks Range, cut the region off from the Arctic Slope to the north. On the east a series of mountains and hills up to eight thousand feet high in the north to less than a thousand feet in the south separate the area from the Koyukuk drainage. Farther south the Nulato Hills divide Northwest Alaska from the Yukon and hem it in on both the east and south against Norton Sound.

Excluding St. Lawrence Island and a handful of other islands, the Northwest falls into three subdivisions--the area which drains into Kotzebue Sound north and east of Kotzebue, the Seward Peninsula, and the eastern littoral of Norton Sound. The DeLong Mountains form the northern limit of the first of these subregions. The Kukpuk, Kivalina, Wulik, and most of the northern tributaries of the Noatak River head in the shadow of high, rugged mountains in the central Brooks Range. The 2,500- to 3,000-foot Baird Mountains parallel the DeLong, dividing the Noatak and Kobuk. The Purcell Mountains and the Lockwood, Zane, Selawik, and northernmost Nulato hills encircle the Kobuk and Selawik rivers on the south.

The Noatak, Kobuk, and Selawik rivers, the three main streams of the northernmost subregion, converge toward Hotham Inlet and Selawik Lake after passing through lake-dotted lowlands. These lowlands are separated by the modest-size Igichuk Hills and Waring Mountains. The Noatak has some lowland marshes near the center of its drainage below the Aniuk River. More closely related to those of the Kobuk and Selawik, are the flats surrounding the village of Noatak. The Igichuk Hills cut this mass of thaw lakes off from the river's delta. The Kobuk's delta is far larger, having more than a dozen significant mouths; some of its channels meander for more than forty miles across lowlands as the river leaves behind its last upland area near Kiana. Except for its headwater area, all of the Selawik flows sluggishly through low, thaw-lake-dotted terrain to Selawik Lake. Although termed a lake, Selawik Lake is at sea level.

The Seward Peninsula juts westward from the center of the Northwest region. The Continental Divide runs along its spine to Cape Prince of Wales following a line of mountains rarely exceeding two thousand feet. Large lava beds in its center testify to the peninsula's volcanic past. Relatively short and parallel streams flow north from points along the divide to the sea. Those in the east tumble from uplands across a narrow coastal lowland. However, those on the northwest corner of the peninsula meander across a more extensive lake-dotted flat; most empty into lagoons formed by narrow barrier reefs. The Kuzitrin and Koyuk rivers capture the waters draining the southern flank of the divide. They are the largest rivers on the peninsula and the only ones besides the Fish River on the peninsula's southern half with extensive flats at their mouths. The Kuzitrin and Koyuk also drain the northern sides of the Kigluaik,

Bendeleben, and Darby mountains. Most of the rivers flowing south into Norton Sound have their origins on the south side of these mountains and course through restricted valleys.

The Nulato Hills confine the eastern littoral of Norton Sound to a strip rarely exceeding forty miles in width. North of Beeson Slough (T. 14 S., R. 12 W., Kateel River Meridian) there are lake-dotted coastal flats, particularly near Cape Denbigh and the mouth of Inglutalik River. South of Beeson Slough, the hills approach close to the sea. Despite the confined area of this subregion, the northeast to southwest trend of the Nulato Hills directs its major rivers--the Inglutalik, Ungalik, Shaktoolik, and Unalakleet--on lengthy, angular courses to Norton Sound. 1/

Long, severe winters, cool summers on the coast, moderately warm summers inland, and little precipitation characterize the weather of Northwest Alaska. In the Norton Sound area winter temperatures regularly hit the sub-zero range; summer temperatures rarely exceed the sixties. North of Kotzebue the mercury frequently plummets to the minus-twenty-degree range on long, sunless winter days. Along the coast in this area, summer temperatures normally remain within twenty-five degrees of the freezing mark. Far inland temperatures regularly climb into the sixties and have hit ninety degrees. Precipitation is limited by a number of factors. The Bering and Chukchi seas and the North Pacific provide most of the region's moisture content, but these water bodies are frozen over much of the year. Cold air can hold little moisture. Only in August does a storm track trace a south to north path, bringing relatively warm air into the region. Consequently, the average annual precipitation is less than twenty inches; the driest area is the north side of the Seward Peninsula where the average is less than ten inches. 2/

Vegetation in most of the region is limited to grasses, ferns, and mosses. These predominate in the wet tundra near the major river deltas; in the moist tundra, which lie west of the Noatak, on the north half of the Seward Peninsula, and along a twenty-mile-wide strip between Unalakleet and the Yukon delta; and in the alpine tundra away from stream beds in the DeLong, Baird, Kigluaik, Bendeleben, and Darby mountains and the Nulato Hills. Shrubs find a place in the middle sections of the moderate-sized rivers flowing into Kotzebue Sound, on the middle and upper Noatak and its tributaries, and on the southern side of the Seward Peninsula within thirty to fifty miles of Nome. White spruce and balsam poplar dominate in bottom land forests which border nearly the entire course of the Kobuk, the lower portions of the Noatak, Squirrel, and Koyuk, and the upper Selawik. Black spruce is the primary tree of the lowland forests of the upper and middle Kobuk. Finally, birch with scattered spruce, aspen, and balsam poplar compose the upland forests which are most evident on the well-drained south-facing slopes of the Baird, Waring, Bendeleben, and Darby mountains, and in the Unalakleet drainage. 3/

A variety of animals inhabit the Northwest region. Major large mammals are polar and grizzly bears, moose, caribou, musk ox, Dall sheep, reindeer, wolves, wolverines, and foxes. Polar bears are not common very far south of Point Hope. Grizzlies prowl coastlines in spring and river banks in the summer and fall. Moose range throughout the entire region, but congregate in river valleys in fall and winter. In the fall, a large portion of the arctic caribou herd funnels south through mountain passes from the Arctic Slope and travels through the Noatak drainage to winter in the Kobuk, Selawik, Buckland, and upper Inglutalik basins. The Federal government introduced reindeer onto the Seward Peninsula and the east coast of Norton Sound by the turn of the century. In 1977 more than two-thirds of the reindeer in Alaska were on the Seward Peninsula; herds near Shaktoolik, Unalakleet, and Stebbins accounted for much of the remainder. Musk ox, unable to break through heavy snow to forage, browse on wind-swept tundra near Point



Hope, Wales, and Kwik. Dall sheep inhabit the rugged alpine tundra of the Brooks Range. Wolves, wolverines, and red fox are not particular about their prey and can be found throughout the region. There also are smaller mammals, including lynx, porcupines, hares, ground squirrels, voles, and shrews. Eagle, hawks, gyrfalcons, owls, ptarmigan, ravens, and a variety of smaller birds dominate the air, unfortunately not to any marked detriment to the region's mosquitoes. 4/

The region's freshwater fish include all five varieties of Pacific salmon, Arctic char, grayling, whitefish, northern pike, inconnu, and several other species. King and silver salmon rarely go north of Norton Sound. The red salmon which spawn in the Kelly River, a tributary of the Noatak, are probably the most northern population of that species. Chum are the most numerous salmon, entering the majority of the significant streams of the region. 5/

Gold has been far and away the premier mineral extracted from Alaska's Northwest. Nearly all of the gold has come from the Seward Peninsula; particularly rich deposits are in the Nome vicinity. Seward Peninsula mines also have produced tin in the Lost River area, coal along the Kugruk River, as well as modest amounts of copper, lead, silver, antimony, and tungsten. Early in this century miners took gold from Kobuk River tributaries near Kobuk and Kiana. More recently, mineral firms have shown an interest in copper lodes north of Kobuk at Bornite; zinc, lead, and silver ore at the Red Dog mine north of the Noatak; and zinc and lead ores along the Wulik River. Major oil companies have shown an interest in pursuing off-shore drilling in the Kotzebue and Norton sounds--both rated as areas of high oil and gas potential. 6/

The remainder of this chapter is devoted to an examination of river and lake characteristics on an individual water body basis. The water bodies are listed in the geographic order in which they enter the ocean, starting in the north and ending near the south end of the region. Secondary streams are listed after the main river from the uppermost tributary to that nearest the mainstream's mouth. Streams which flow directly into the ocean are in capital letters; tributaries are underlined.

## UKINYAK CREEK

For more than five miles Ukinyak Creek flows south, cutting through the Lisburne Hills. It then turns west for its last four miles to reach the Chukchi Sea about ten miles south of Cape Lisburne.

## KAPALOAK CREEK

Kapaloak Creek winds around a ridge extending northwest from Mount Buckland and then heads southwest for about five miles. Then it pivots westward along the southern flank of Angayutak Mountain to reach the sea, having fallen about a thousand feet in its eight- to nine-mile course.

## AKALOLIK CREEK

Akalolik Creek has its origin on the east side of Mount Buckland. In about two miles it drops four hundred feet. It then turns southwest for nearly four miles and falls another 250 feet. In the creek's next nine miles it flows southward and has a gradient of thirty to forty feet per mile. Akalolik Creek then turns west and drops about 150 feet in a little more than five miles before reaching the Chukchi Sea.

## KUKPUK RIVER

The Kukpuk River, the major river of the Lisburne Peninsula, and drains over twenty-two hundred square miles. For the first half of its approximately 160-mile length it flows in a general southwest direction from its source in the DeLong Mountains. It then turns northwest to skirt the southern flank of the Lisburne Hills. The Kukpuk plummets five hundred feet in its first six miles. The river then becomes braided. Its gradient drops dramatically so that in its next twenty miles it falls about seven hundred feet. For about fifty more miles it has intermittent braiding. Near river mile 87 and 250 to 300 feet above seal level, the Kukpuk begins a forty-five mile meandering course in a well-defined channel only occasionally broken by islands or sand or gravel bars. Just south of Angmakrok Mountain the valley broadens and contains a number of small lakes. At this point the river is 120 feet above the sea. The Kukpuk reenters a confined valley which it does not exit until a mile below Ipewik River and at about fifty feet in elevation. It turns more directly westward eight miles below the Ipewik. At river mile 7 the Kukpuk enters wet tundra and its Sulupoagaktak Channel separates from the main river. Both then empty into Marryat Inlet.

### Kakpeyak River

Kakpeyak River enters the Kukpuk at river mile 42.3. It is fourteen miles long and flows southwest along the eastern and southern flanks of the South Maktak Hills. In its first mile it plunges well over one hundred feet. The Kakpeyak drops an average of fifty feet per mile for the next five miles; it falls a little over one hundred feet in its last eight miles. Except for scattered braided segments between river miles 4 and 7, the river runs in a single channel. Hills several hundred or more feet above the river's level are on either side of its banks within one and one-half miles.

### Ipewik River

Ipewik River is eighty-five miles long and, along with its tributaries including Nilik River, drains over eleven hundred square miles. For most to its first fifty miles, it flows westward. At the confluence of the Nilik it pivots toward the southwest. These directions, however, are only general. Throughout its course the Ipewik flows in a single channel winding its way between ridges several hundred feet above it. There is one marshy segment near Horseshoe Bend in the northwest corner of T. 10 S., R. 52 W., Umiat Meridian.

### Nilik River

The Nilik River is over thirty miles long. Its first five miles trend northward before the river swings around to the south. Here it enters a five-mile long, one- to three-mile wide marshy area. Its gradient through this marsh is about ten feet per mile; in the remaining twenty miles the gradient declines to an average of only five feet. Throughout virtually its entire course the river flows in a single channel. The Nilik has three major tributaries, Sakvelak, Tungnak, and Utakturok creeks. Each drains the east slopes of the Lisburne Hills and is about twenty miles long.

## OGOTORUK CREEK

Waters on the western slopes of Sigrikpak Ridge gather to form Ogotoruk Creek. This stream drops over four hundred feet on its six-mile, westward course to the confluence of Kiliguak Creek where it turns southward. Ogotoruk is braided and falls a little over one hundred feet more in its remaining five miles to the sea.

## **SINGOALIK RIVER**

Singoalik River, approximately twenty miles long, drains hills several hundred to a thousand feet high northwest of Kisemaraktuk Mountain. It trends southwest and passes through a marshy area in its lowest two miles before striking the coast near Cape Seppings.

## **ASIKPAK RIVER**

The Asikpak River, nearly twenty miles long, roughly parallels the Singoalik on the southeast side of Kisemaraktuk Mountain and the Siaktak Hills. It has some marshy areas in its upper part. Its channel splits in two more than a mile before disgoring into Asikpak Lagoon.

## **KIVALINA RIVER**

For fifty to sixty miles the Kivalina flows south, passing through the Kitingirak Gap and then turning southwest near Uyaraksivik Hill to run between Kili and Simik hills to Kivalina Lagoon. It drains 640 square miles. Three unnamed tributaries which converge near the Kivalina's midpoint (T. 30 N., R. 24 W., and T. 31 N., R. 25 W., Kateel River Meridian) account for much of this drainage area. Two of these drain the southern and western slopes of the Wulik Peaks while the other and the Kivalina itself find their source in a ridge over a thousand feet high which separates the Kivalina and Kukpuk valleys. The Kivalina is a single-channel water body until it reaches the second of these major tributaries. It then becomes braided for nearly all the rest of its course. The channels do merge together about four miles above its mouth, but the river soon splits again into three major channels to form a delta several miles broad.

## **WULIK RIVER**

Finding its source in the heart of the DeLong Mountains, the Wulik River descends over twelve hundred feet in its seventy- to eighty-mile course to the sea. Its drainage encompasses 880 square miles. The Wulik has few named tributaries; the longest is Ikalukrok Creek which parallels the upper half of the mainstream. In the upper third of its length the Wulik drains the Wulik Peaks and Punupkahkroak Mountain on its west and a series of mountains, including Sheep Mountain on its east. These steep ranges loom fifteen hundred to two thousand feet above the riverbed. In this mountainous segment the Wulik generally runs in a single channel, but is braided with gravel bars for about eight miles. East of Punupkahkroak Mountain the river abandons its southward course for one to the southwest. South of the mountain the river becomes very braided and remains so all the way to the coast. In its last fifteen miles it passes through the northern portion of a hundred-square-mile area of wet tundra.

## **IMIKRUK CREEK**

Imikruk Creek begins in an unnamed lake nearly four hundred feet above sea level and flows fifteen miles west-northwest and then southwest to Imikruk Lagoon. Most of its length lies within a large wet tundra. In its lowest eight or nine miles it has a particularly low gradient; it falls only one hundred feet in that distance.

## **OMIKVIOROK RIVER**

Omikviorok River heads near Kikmiksot Mountain in the Mulgrave Hills and runs in a westerly direction for over thirty miles to Ipiavik Lagoon. It is a single-channel stream

until it reaches the southern end of a large wet tundra plain where it splits into several channels for its last five miles.

### **RABBIT CREEK**

Twenty-three-mile-long Rabbit Creek drains the Mulgrave Hills in a southwesterly direction. It has an extremely braided segment several miles above its mouth; otherwise it generally runs in a single channel. For most of its course hills, five hundred feet above the valley floor are within a couple of miles of either bank. Only in the lowest few miles do the hills recede, giving way to swamplands.

### **KILIKMAK CREEK**

Kilikmak Creek's head is on the north slope of Tiyahtalik Mountain from whence it traces a west-northwesterly course to the Chukchi Sea south of Kotlik Lagoon. The stream meanders twenty-three miles, almost all of it in a single channel. In its last six miles it is bordered on either side by a narrow boggy strip.

### **TUKROK RIVER**

In his Dictionary of Alaska Place Names Donald Orth describes Tukrok River as a "water passage." 7/ It drains Krusenstern Lagoon into Kotzebue Sound. The river is ten miles long. For its entire course it meanders in swampland; it parallels the coastline for its last four and one-half miles.

### Evelukpalik Creek

At a little over eight miles in length, Evelukpalik Creek is the longest stream entering Krusenstern Lagoon. It flows westward through low hills for about four miles and then enters a swamp. Approximately two miles from its mouth, it pivots to the southwest and less than a half mile from its mouth it receives water through an outlet from Tulilik Lake, the largest lake in its drainage.

### Situkuyok River

Situkuyok River enters Tukrok River a little over two miles above its mouth. It is somewhat over seventeen miles long. It heads at about 550 feet above sea level and flows south for nine mile, passing between Kaksurok Mountain and Mount Noak. The Situkuyok then meanders through marshy country, first generally westward and then to the south.

### **NOATAK RIVER**

At 440 miles, the Noatak River is the longest water body in Northwest Alaska. It drains 12,600 square miles, making it also the largest basin in the region. The river has its origin in glaciers on the eastern slope of Mount Igipak not far from the beginning of the Kobuk River, which roughly parallels it to the sea. For its first sixty miles it winds its way through a narrow valley between peaks which rise thousands of feet within a couple of miles of the riverbed. The Noatak is braided and the valley holds a number of small lakes in this uppermost part of its course. Thereafter, the valley broadens and more lakes and marshes appear. This condition continues down to the Nimiuktuk River. Here the Noatak swings southward into its Grand Canyon and then the Noatak Canyon between the outlying hills and mountains of the DeLong and Baird mountains. The river is confined almost exclusively to a single channel as it pierces this barrier.

Once it emerges from the Noatak Canyon, the river becomes fringed with gravel bars and has a couple braids before it reaches the Kelly River. Below the Kelly the Noatak disintegrates into a tangle of channels. Almost simultaneously the river begins to twist around to the south. Braiding becomes more pronounced as the water body nears the village of Noatak; at places the river thus spreads over several miles. The river cuts along the western side of a five-hundred-square-mile flat dotted with hundreds of thaw lakes. In this area the banks rise only five to fifteen feet above the river at normal water stages. 8/ After twisting southward for more than fifty miles through the heavily braided segment below Kelly River, the Noatak begins to run in a relatively confined yet wide channel as it pivots eastward along the northern face of the Igichuk Hills. It strikes through the hills just below Agashashok River. The river turns south, then east, and then south again. It throws off several distributaries after this last turn and discharges its water into the sea across a delta fifteen miles wide.

#### Aniuk River

Aniuk River heads near lake-dotted Howard Pass. It flows in a generally southwesterly direction for forty-five miles. Its valley is broad, in many places marshy, and its gradient up to the pass is under twenty feet per mile. The Aniuk drains a thousand square miles and enters the Noatak at river mile 303.

#### Cutler River

The forty-five-mile-long Cutler River and its tributaries, the most important being the fifty-five-mile-long Imelyak River, drain over eleven hundred square miles. The Cutler and the Imelyak flow northwest from their origins in the Baird and Schwatka mountains, respectively. At a point only four miles from the Noatak the Imelyak makes a dramatic turn to its southwest to flow into the Cutler. Both streams meander in a single channel. Below its uppermost ten miles, the Cutler enters lake-dotted, marshy terrain for about ten more miles. It reaches the Noatak at river mile 285.

#### Anisak River

Although it rises above the two-thousand-feet contour in the DeLong Mountains, the Anisak River runs only a fourth of its sixty miles before it enters a broad valley. This it follows east and then south between the DeLong Mountains and Avingyak Hills on its left and the Iggiruk Mountains on its right to reach the Noatak near river mile 246. Once it emerges from the mountains it is slightly braided and flows through boggy country for most of its remaining course.

#### Nimiuktuk River

Nimiuktuk River has its sources near Black Mountain. For approximately its first dozen miles the Nimiuktuk tumbles out of the mountains with a gradient of one hundred feet per mile. About twenty-five miles above its mouth the river flattens out, becomes braided, and turns to flow almost directly south. Throughout this lower stretch the Nimiuktuk remains braided and its gradient is under twenty feet per mile. The water body drains 560 square miles.

#### Kugururok River

The Kugururok River flows sixty miles in a south-southwest direction to reach the Noatak at river mile 130. It and its major tributaries--Trail, Nunaviksak, and Kagvik creeks--drain the DeLong Mountains from Inaccessible Ridge to Black Mountain. The

total basin encompasses nearly 950 square miles. Like the Nimiuktuk, it becomes braided once it leaves its uppermost mountain origins. Between Kagvik and Trail creeks, sand or gravel bars are especially pronounced. Below Trail Creek, the channels merge together to travel the last fifteen to twenty miles to the Noatak.

### Kelly River

The Kelly River meanders for forty-five miles in a generally southerly course from a short divide between itself and Kokolik River in the DeLong Mountains to the Noatak at river mile 106, about a dozen miles below the Noatak Canyon. It drains nearly six hundred square miles. The river braids around gravel or sand bars for most of its length. For all but its last eight to twelve miles its gradient exceeds twenty feet per mile.

### Eli River

The Eli River has its source south of the Maiyumerak Mountains. For almost half of its nearly one-hundred-mile course it flows westward in a single channel in a narrow valley confined by mountains looming over a thousand feet above its bed. Once it passes the westward end of the mountains the Eli, emerges into a five-hundred-square-mile wet tundra dotted with thaw lakes. The Eli shortly turns south-southwesterly and parallels the Noatak. A number of sloughs east and southeast of the village of Noatak connect the two rivers. The two rivers finally merge a dozen miles directly south of the village.

### Agashashok River

The Agashashok River's source is south of the Eli's at the western end of the Baird Mountains. It flows in a southwesterly direction for about fifty miles and drains over four hundred square miles. After its first twenty miles it becomes braided, and subsequently makes its way past many sand or gravel bars to merge with the Noatak at the foot of the Igichuk Hills.

## **KOBUK RIVER**

The Kobuk River rises against the continental divide northeast of Walker Lake. In more than 370 miles on its westerly course to Hotham Inlet, the river drains twelve thousand square miles. The Kobuk's headwaters run down slopes over three thousand feet high. But by the time it reaches river mile 347 at the outlet of Walker Lake, the Kobuk is little more than six hundred feet above sea level.

The Kobuk flows in a wide valley for virtually its entire course. East of Killak River the Kobuk courses its way between the Angayucham Mountains ten miles to the north and the Lockwood Hills, the peaks of which are five miles south of the river. Below the Killak, the Kobuk enters a marshy eight- to ten-mile-wide valley studded with lakes. This stretch continues nearly uninterrupted almost to Kiana. River banks here are of sand, gravel, and silt; few rocks are exposed. 9/ Down to Ambler River the Kobuk meanders sharply and is braided. Below this the river still encounters sand or gravel bars, but generally runs in a confined channel, skirting the southern end of the Kallarichuk Hills eight miles east of Kiana. Southwest of Kiana the river begins to split into a multitude of channels through which it discharges into Hotham Inlet across a delta thirty miles wide.

### Reed River

Reed River heads near Angiaak Pass and flows about fifty-five miles south to the Kobuk, draining 375 square miles. It courses its way through a restricted valley; north of Nutuvukti Lake mountains looming several thousand feet above the riverbed crowd to within a few miles on both sides. The Reed River reaches the right bank of the Kobuk at river mile 310.

### Selby River

Selby River's source is in Lake Selby, through which it also receives the water of Narvak Lake. The Selby River flows south less than ten miles to reach the Kobuk at river mile 283. The Selby has one named tributary--Angayukachak Creek--which flows southwest to meet the Selby midway in its course.

### Pah River

The Pah River has its source in a low divide in the Lockwood Hills; its headwaters are located near a portage to the Hogatza River in the Koyukuk drainage. It is fifty-five miles long and its basin encompasses nearly eight hundred square miles. It flows southwest for about twenty miles and drops over two hundred feet before reaching the Pah River Flats, a ninety-square-mile mass of small lakes. Once it emerges from the flats, the river pivots and heads north to the Kobuk. Through the approximately thirty-five miles from the head of the flats to the Kobuk the Pah drops less than two hundred feet. It reaches the Kobuk at river mile 275.

### Killak River

The Killak River rises in Coal Pass and flows south-southwesterly about ten miles to empty into the Kobuk on its right bank at river mile 272. The river falls over eight hundred feet on its way to the mainstream.

### Mauneluk River

The Mauneluk River flows fifty to sixty miles south from the Schwatka Mountains to the Kobuk and drains over 550 square miles. Like Reed River it is enclosed in steep mountains, especially for its upper portion north of Avaraak Lake. It is a single-channel stream for virtually its entire length. West of Avaraak Lake it meanders between numerous small landlocked lakes.

### Kogoluktuk River

For the first third of its sixty-mile length the Kogoluktuk River, like the Reed and Mauneluk, courses southward in a narrow, steep valley in the Schwatka Mountains. It then reaches the broad Ambler Lowland. The river begins to meander, and the mountains gradually retreat to be replaced by marshland and small lakes. After meandering for twenty-five miles in this lowland, the Kogoluktuk squeezes between Asbestos Mountain and Ferguson Peak to pour the waters of over four hundred square miles into the Kobuk.

### Shungnak River

The approximately fifty-mile-long Shungnak River roughly parallels the Kogoluktuk. For about fifteen miles it flows southward in a narrow valley through mountains several thousand feet above the riverbed. It then heads westward through a portion of the Ambler Lowland before reentering a small, narrow valley between Bismark and Shungnak



mountains. In the Shungnak's last ten miles, it winds through marshes to discharge the water of its more than two-hundred-square-mile drainage into the Kobuk.

### Ambler River

The Ambler River is approximately seventy miles long and drains over one thousand square miles. It heads near Nakmaktuak Pass, a passage to the Noatak, and flows south in a single channel for nearly thirty miles. The river then braids for fifteen miles. In this braided segment it pivots to the west and swings around Lake Anirak. Near the Kalurivik Creek the river loses its braided character as it meanders westerly and, in its last few mile, southerly to the Kobuk. The Ambler is a single-channel stream meandering through marsh for its lowest twenty-five miles. About ten miles above its mouth it receives the waters of the Redstone River, a river more than forty-five miles long coming from the north.

### Redstone River

The Redstone is the Ambler's largest tributary. It rises over one thousand feet above sea level and in its first ten miles it falls to below the four-hundred-foot level as it courses between steep-sloped mountains. It then enters a broader, sometimes marshy valley. As it flows southward the Redstone occasionally is braided and its lowest twenty miles meanders between small lakes, many of them oxbow lakes.

### Hunt River

The Hunt River is over forty miles long and drains more than six hundred square miles on its southward course to the Kobuk River, which it meets at river mile 134. It runs between steep mountains in a restricted valley for its upper half; thereafter the Hunt traverses a lowland in a slightly braided channel. In its last five miles it twists among numerous small lakes. In this same area Hunt River meets its largest tributary, Akillik River, which flows forty miles from the northeast. The characteristics of the Akillik are similar to those of the Hunt, except that the Akillik is less braided.

### Kaliguricheark River

The Kaliguricheark River runs southward about twenty-five miles to reach the Kobuk at river mile 109. It heads at over one thousand feet above sea level and for more than ten miles it runs in a narrow and steep valley. The rest of its course is in a mile-wide marsh.

### Tutuksuk River

For the first dozen of its forty-seven miles, the Tutuksuk flows westward. It then makes a sharp turn to the south, continuing to pass between peaks several thousand feet above the riverbed. At about river mile 20 the Tutuksuk leaves the highlands behind and for its last ten miles it meanders through a marsh lowland. In all, the river drains 350 square miles before entering the Kobuk through two mouths at river miles 106 and 105.

### Salmon River

The Salmon River is much like an enlarged version of the Tutuksuk River, immediately to its east. Like the Tutuksuk it passes through a narrow valley for most of its course, first trending west and then pivoting to the south. Also it emerges from these mountains to pass through the same swampy district the Tutuksuk traverses before

striking the Kobuk's north bank at river mile 103. The Salmon River is sixty-two miles long and drains 660 square miles. Its two main named tributaries are Nikok River at river mile 27 and Kitlik River at river mile 10.

### Squirrel River

At ninety-two miles long and with a drainage exceeding sixteen hundred square miles, the Squirrel River is the largest Kobuk tributary. It enters the Kobuk at river mile 63 just above Kiana. The Squirrel and its three largest tributaries--North Fork, Omar River, and an unnamed fork reaching the Squirrel in Sec. 3, T. 21 N., R. 12 W., Kateel River Meridian--head in the Baird Mountains and flow southward in a braided and gravel- or sandbar-riddled channels. At river mile 73 the Squirrel swings abruptly eastward. It remains braided with river bars common. The Squirrel collects the waters of the large unnamed tributary at river mile 59. The North Fork and Omar River yield their water at river miles 54 and 42, respectively. By the time it reaches these tributaries the river is flowing east-southeast. In this stretch it receives the waters of a number of small left-bank tributaries including Klery, Central, and Canyon creeks. The river then dips more dramatically southward and then southwestward just above its mouth. As it twists southward, the Squirrel passes between the Kallarichuk and Kiana hills.

### **SELAWIK RIVER**

The Selawik River has its origins at the north end of the Zane Hills and flows almost due west between the Kiliovilik Range and the Purcell Mountains into the huge lake-studded flats area which lies east of Selawik Lake. For about its first fifty miles, the river meanders in the broad valley between the two ranges of highlands. This valley contains a scattering of small lakes near the river. Then near Ingruksukruk Creek the Selawik enters the immense lowland tundra. Here the river's course becomes even more tortuous, though it maintains its westerly direction until the confluence of Tagagawik River near river mile 80. Draining over sixteen hundred square miles in its more than one-hundred-mile northward course, the Tagagawik is the Selawik's largest tributary. It heads in the northern Nulato Hills. For the first half of its course it runs between low hills. In its lower half it winds its way between scores of small lakes in the huge lowland tundra. The Selawik then swings northward to the mouth of the Kugarak River, the second largest Selawik tributary. The Kugarak River rises on the southeast flank of the Waring Mountains and almost immediately enters the marshy flats extending east of Selawik Lake. The Kugarak first flows south and then west passing between over a hundred small lakes before reaching the Selawik at river mile 65. After receiving the Kugarak the Selawik resumes its westerly course. It is still very sinuous, and is a half mile or more wide. One distributary system flows off from the main river through Throat River; others diverge below the community of Selawik.

### **MANGOAK RIVER**

Mangoak River rises in the Selawik Hills and flows twenty-six miles northward in a meandering single channel before turning northwest for six miles to Selawik Lake. It drains over two hundred square miles.

### **KAUK RIVER**

The Kauk River as well as many of its southerly tributaries have their origins in the Selawik Hills. The river flows over thirty-two miles west-northwesterly along the foot of these hills and then through a marshy area to drain its 215 square mile basin into Eschscholtz Bay.

## BUCKLAND RIVER

The Buckland River drains over twenty-eight hundred square miles between the Selawik Hills on the north and the northern Nulato Hills to the south. Most of this broad basin displays a relief of low hills gradually rising four to six hundred feet above the bed of the river and its major tributaries--Fish River and North, Middle, South, and West forks. The Buckland forms at the confluence of its North and South forks and then meanders in a west-northwesterly direction for about a hundred miles. It then swings toward the north and broadens markedly in its last twenty miles to Eschscholtz Bay.

The Middle Fork, which enters the South Fork, and the North Fork and Fish River parallel each other, flowing southwesterly, generally in a single channel. The South Fork heads against the Continental Divide opposite the head of the Inglutalik River and flows north and then northwest. The West Fork drains the west end of Talik Ridge. Both the South and West forks and the main river, especially from its head to Fish River, meander in one- to three-mile-wide valleys dotted with small lakes and ponds. Fish River and West Fork converge on the Buckland at river miles 60 and 51, respectively.

## KIWALIK RIVER

The Kiwalik River flows for nearly sixty miles in a north-northwesterly direction from the base of Granite Mountain to Kiwalik Lagoon. It becomes increasingly sinuous as it travels to the sea. For the lower three-fourths of its course it is bordered by bog with numerous small lakes. In this stretch the river falls two hundred feet. The Kiwalik drains over eight hundred square miles. None of its tributaries are very long. The largest right-bank tributaries are Quartz and Hunter creeks; Canoe, Glacier, Bonanza, Eldorado, and Candle creeks are among those contributing to the Kiwalik's flow from the west.

## KUGRUK RIVER

Imuruk Lake at 1021 feet in elevation is the source of the sixty-mile-long Kugruk River. The lake encompasses twenty-seven square miles. The river drains nine hundred square miles as it first flows about twenty miles northeast, then an equal distance northward, then ten miles to the west, and finally another ten miles to Kugruk Lagoon. Low-lying hills rising four hundred to a thousand feet above the riverbed characterize the basin. The most important tributaries are Holtz and Chicago creeks and Burnt River.

## INMACHUK RIVER

The Inmachuk River flows thirty-three miles in a northeasterly direction from a set of fourteen-hundred-foot hills which divide its headwaters from those of Goodhope River. After tumbling out of these hills in its first seven miles, the Inmachuk drops only two hundred more feet in the rest of its path to Kotzebue Sound. The river's total drainage is over three hundred square miles. Pinnell River, the Inmachuk's major tributary, accounts for much of this area. It heads in a pond north of Imuruk Lake and flows eighteen miles northerly in a single channel. The Pinnell River also receives water from Imuruk Lake through the Fairhaven Ditch.

## CRIPPLE RIVER

Cripple River is twenty-five miles long and flows northwest and then north to discharge into Goodhope Bay one to two miles east of the mouth of Goodhope River. It is a

single-channel stream which in its lower half is fringed by a narrow marsh. None of its tributaries, which include Mystery, Polar Bear, Hoodlum, and Pot creeks, are more than seven miles long.

#### **GOODHOPE RIVER**

The Goodhope River flows northwest and then gradually swings around to northeast a little more than halfway through its seventy-mile course to Goodhope Bay in Kotzebue Sound. In this distance it drains over 450 square miles and falls a thousand feet. Its gradient is especially low, only four feet per mile, in its last fifty miles. It heads against the Continental Divide opposite the headwaters of the Noxapaga River. Its most important tributaries include Bilge, Cottonwood, Esperanta, Placer, and Humboldt creeks.

#### **PISH RIVER**

Pish River has its source on a ridge separating it from the Serpentine Hot Springs. It flows northeasterly for forty-three miles. It falls about eight hundred feet in its first ten miles and two hundred feet in the rest of its course. The Pish is a single-channel stream. In its lowest thirty-three miles it passes through a swampland. It has no named tributaries.

#### **NUGNUGALUKTUK RIVER**

The Nugnugaluktuk River is about thirty miles long and drains over 450 square miles. Its headwater tributaries lead from a series of lakes one to two miles in diameter southwest of Devil Mountain. From there the river meanders eastward through wet and moist tundra for over thirty miles to Goodhope Bay. In this distance it falls barely one hundred feet. The Nugnugaluktuk has three relatively large tributaries--an unnamed twenty-two-mile-long one flowing northeast from a low divide to reach the main river at river mile 10, Lane River which runs north-northeasterly for twenty miles to river mile 4, and an unnamed thirteen-mile-long tributary which flows southeasterly to about the half-mile river mile. All three tributaries meander for all or virtually all of their courses within the same wet and moist tundra which surrounds the main river.

#### **ESPENBERG RIVER**

Espenberg River is twenty-seven miles long and drains about sixty square miles of wet and moist tundra northeast of Devil Mountain. Its headwater tributaries empty lakes a half mile in diameter. It flows northward to the Chukchi Sea. The river's gradient is very gentle--only two and one-half feet per mile for its lowest twenty miles.

#### **KITLUK RIVER**

Kitluk River heads in the more northerly of the two Devil Mountain Lakes. This lake is three miles by two miles in size and eighty-three feet above sea level. The Kitluk follows a generally northward course to the ocean for eighteen miles through low tundra. Its gradient is not steep; it drops fifty feet in its lowest eleven and one-half miles and twenty-five feet in the last five miles.

#### **KALIK RIVER**

The headwaters of Kalik River drain two round lakes each with a diameter of a half mile. It flows northward to the ocean eleven miles roughly parallel and midway between Kitluk and Singeakpuk rivers. Its gradient is steeper than that of the Kitluk, falling one hundred feet in its lowest ten miles and fifty feet in its lowest six and one-half miles.

## **SINGEAKPUK RIVER**

White Fish Lake, a lake with a mile-and-one-half diameter and only forty feet above sea level, empties into Singeakpuk River. The river then trends northward for fourteen miles in a sinuous course through wet tundra to the Shishmaref Inlet.

## **SERPENTINE RIVER**

Schlitz and Hot Springs creeks merge to form Serpentine River which then meanders wildly northwest fifty miles to Shishmaref Inlet. The river drains over seven hundred square miles of the lake-dotted wet and moist tundra of northwest Seward Peninsula. The average gradient for the entire river is three feet per mile. Its most important tributaries are its North and South forks which converge upon the mainstream near river mile 14.

## **ARCTIC RIVER**

Arctic River is over thirty-five miles long, rising south of Ear Mountain and flowing northeast for about twenty-five miles before beginning a more northerly course. It is confined to a single channel surrounded by slopes which climb gradually to six hundred feet or more above the river level for its uppermost fifteen miles. Below that, it courses through low lake-dotted tundra to Shishmaref Inlet. The river has a low gradient. It drops less than one hundred feet in the twenty-five miles closest to its mouth. The Arctic's largest tributaries are Kreuger, Fox, and Mission creeks.

## **KUGRUPAGA RIVER**

The Kugrupaga River flows northwest to Kugrupaga Inlet, draining over 160 square miles in its forty-three-mile course. The upper two-thirds of its length is amid low hill country; few of the hills along it rise more than a few hundred feet above the riverbed. The lowest portion of the river passes through coastal wet tundra. The gradient averages only three feet per mile for its lowest thirty miles.

## **NULUK RIVER**

The Nuluk River has its source at the juncture of its North and South forks and trends in a braided channel northwest for thirty-five miles to the north end of Ikpek Lagoon. Its basin encompasses 280 square miles. At the confluence of its two forks the Nuluk is nearly four hundred feet above sea level. In less than eight miles it drops to 250 feet above sea level. The river's gradient is much less near its mouth where it passes through wet tundra; in the last sixteen miles before its mouth it falls only fifty feet.

## **PINGUK RIVER**

The Pinguk River is very similar to the Nuluk. It too is braided, trends in a northwest direction, and passes through wet tundra in its last miles before entering Ikpek Lagoon. The Pinguk is thirty-six miles long and drains 170 square miles. Its major tributary, York Creek, accounts for much of this drainage area.

## **MINT RIVER**

The Mint River follows a northwesterly course for twenty-three miles from the York Mountains to Lopp Lagoon, draining 160 square miles. It is braided and has numerous

sand or gravel bars. Mint River has an average gradient under ten feet per mile for its lowest eleven miles. Above that the gradient is considerably steeper; the Mint falls three hundred feet between river miles 21 and 11. The river has two important tributaries; Grouse Creek enters on the left and Yankee River on the right.

#### **LOST RIVER**

Lost River tumbles southward nine miles through a narrow valley in the York Mountains. It has a steep gradient, falling over five hundred feet in all and one hundred feet in its lowest three miles.

#### **DON RIVER**

The Don River flows in a generally southerly direction for about twenty miles to the west end of Brevig Lagoon. In that distance it drops four hundred feet. It falls only one hundred feet in its lowest twelve miles. The Don has a single channel for the upper half of its course. Below that it is intermittently braided with some sand or gravel bars.

#### **CALIFORNIA RIVER**

The California River makes its way to the east end of Brevig Lagoon by following a nearly direct southerly route. For most of its fifteen-mile course it is confined to a single channel. In its lowest four and one-half miles, a distance in which it falls one hundred feet, it is heavily braided.

#### **AGIAPUK RIVER**

The Agiapuk River is about sixty-five miles long. The stream is braided and frequently marked by river bars, particularly above Flat Creek. From a divide separating it from the head of the Pinguk River, the Agiapuk flows eastward for a little over half its length, then it abruptly swings south. American River, its major tributary, flows from the north and accounts for much of the Agiapuk's eleven hundred-square-mile basin. American River enters the Agiapuk at its midpoint in the midst of a boggy, lake-dotted flats area. In its last miles the Agiapuk splits into a number of twisting channels which form a delta across the midsection of the northern shore of the Imuruk Basin.

#### **KAVIRUK RIVER**

Johnston and Coco creeks merge to form Kaviruk River. The river then trends southwestward for more than twenty miles passing along the west side of a bog area to reach Mary's Lake. Mary's Lake, in turn, connects by sloughs to Imuruk Basin.

#### **KUZITRIN RIVER**

The Kuzitrin River issues from Kuzitrin Lake in the heart of the Seward Peninsula and flows west and then southwest for 125 miles to Imuruk Basin. In the twenty miles along the base of the Bendeleben Mountains it traverses to its North Fork, the Kuzitrin falls well over a thousand feet. Below the North Fork the river meanders a great deal amid a large mass of wet tundra and small lakes for virtually the entirety of its remaining distance. The exception is the confined stretch of the river at Bunker Hill. In this distance the gradient is very mild. In its lowest seventy-five miles, down from a point a little above the Noxapaga River, the Kuzitrin falls only one hundred feet. In all, the waters of twenty-six hundred square miles of the Seward Peninsula reach the ocean via the Kuzitrin.

### Noxapaga River

Noxapaga River has its origins on the north side of the large lava bed in the center of the Seward Peninsula. It makes its way westward past the lava bed and pivots south and flows through wet tundra to meet the Kuzitrin at river mile 71. The Noxapaga is about sixty miles long and has a basin encompassing nearly five hundred square miles.

### Kougarok River

Macklin and Washington creeks converge midway between Midnight and Kougarok mountains to form the Kougarok River. The Kougarok then flows southward for over fifty miles to the Kuzitrin at river mile 47, draining over five hundred square miles. Down to river mile 20 the water body courses its way in a single channel through a constricted valley amid hills which rise six hundred to a thousand feet above the river bed within a mile or two of either bank. In the last twenty miles the Kougarok becomes more sinuous, is occasionally braided, and passes along the western edge of the wet tundra area just above Bunker Hill to converge with the Kuzitrin.

### Pilgrim River

The Pilgrim River issues from the east end of Salmon Lake. It flows east for five miles, northeast for ten miles, north-northwest for ten more miles, and finally meanders westward for thirty-five miles to empty into the Kuzitrin River about seven and one-half miles above the Kuzitrin's mouth. In its last forty-five miles the Pilgrim passes through a slough and lake-dotted flat. It exhibits some braiding for virtually its entire length. The Pilgrim drains nearly five hundred square miles.

### **COBBLESTONE RIVER**

Draining several small lakes in the Kigluaik Mountains, Cobblestone River is about twenty miles long and flows in a northerly direction. It cuts through a northern ridge of the Kigluaik Mountains and falls over five hundred feet before reaching Imuruk Basin. The Cobblestone's gradient is relatively steep. It drops nearly one hundred feet in its lowest four miles.

### **BLUESTONE RIVER**

Gold Run and the Right Fork join to form Bluestone River which subsequently flows northwest fourteen miles to the Tuksuk Channel, the outlet of Imuruk Basin. Its course lies in a narrow valley with hills rising hundreds of feet on either side of the river. In its lowest ten miles the river drops fifty feet. It falls almost 150 feet in the upper four miles.

### **TISUK RIVER**

Tisuk River rises on the western slopes of the Kigluaik Mountains and trends northwest and then southwest for a total of twenty miles to reach the Bering Sea. It is slightly braided for much of its length.

### **FEATHER RIVER**

The Feather River is about seventeen miles long and flows almost directly west to the Bering Sea. It has a braided channel and a rather steep gradient, averaging about thirty feet per mile for its lowest three miles and nearly fifty feet for its lowest ten miles.



## SINUK RIVER

Sinuk River has its origin at an elevation of 1,350 feet in several small lakes at the northwest base of Tigaraha Mountain. It follows a southwesterly, generally single-channel, course to empty into the Bering Sea near Sledge Island. The river's basin encompasses over three hundred square miles and drains much of the southern slope of the Kigluaik Mountains. Near its source the gradient is high. The Sinuk tumbles nearly a thousand feet in its first ten miles. However, the river flattens out farther downstream, dropping only 250 feet in its lowest twenty-five miles. Its major tributary is Stewart River, which flows westward for fourteen miles to meet the Sinuk at river mile 28. The Sinuk also receives the water of Glacial Lake, a three-and-one-half-mile-long water body, through an unnamed outlet which meets the Sinuk at river mile 33.

## CRIPPLE CREEK

Cripple Creek is twenty-six miles long and flows southwesterly and then south-southeasterly to enter Norton Sound eleven miles west of Nome. It generally follows a single channel between hills rising several hundred to over a thousand feet within three miles of the river. Cripple Creek drops 250 feet in its lowest seventeen miles and only fifty feet in its lowest seven miles. A number of ditches dating from the early years of this century collect water from some of its tributaries and redistribute them within the basin.

## PENNY RIVER

Penny River trends southward for fourteen miles to reach Norton Sound nine miles west of Nome. Its valley for all but its last four or five miles is restricted within steep mountains rising from both its banks. The river falls fifty feet in its lowest four miles through a moist tundra strip; above river mile 4 the gradient rises rapidly. Its basin encompasses thirty-four square miles.

## SNAKE RIVER

Gold Bottom Creek and the North Fork Snake River converge to form Snake River which then trends southerly and then easterly to discharge into Norton Sound at Nome. It winds through a broad valley and has a mild gradient, dropping less than two hundred feet on its twenty-eight-mile course to the sea. Mining dredges have worked on the river and its lower tributaries. Earlier in this century, miners used ditches to add Nome River water to some of the lower tributaries for mining purposes. The Corps of Engineers also has undertaken dredging operations at the mouth of the river to provide a small boat harbor. 10/

## NOME RIVER

Buffalo, Deep Canyon, and Dickens creeks converge to form Nome River, which then winds its way south nearly forty miles to Norton Sound. Hills rise hundreds of feet above the river within one mile of its banks in its upper stretches; the valley gradually broadens downstream. The river drains over 160 square miles. The gradient averages a little over three feet per mile for the lowest fifteen miles. In the next highest six miles the gradient averages eight feet; in the following six miles it exceeds fifteen feet per mile. Thereafter, the gradient continues to rise; the USGS in 1908 described it as "torrential" in its uppermost five or six miles. 11/ A great deal of mining including dredging, has occurred on this river and its tributaries and some of its water has been diverted by ditches to the lower Snake River.

## FLAMBEAU RIVER

Flambeau River flows south-southeasterly for over twenty-five miles from amid mountains over a thousand feet high to Safety Sound east of Nome. Its gradient is steep in its upper half falling about two hundred feet from river mile 25 to river mile 17. However, it falls only fifty feet in its lowest seventeen miles and twenty-five feet in its lowest ten miles. Eldorado River, the Flambeau's major tributary, parallels the main stream for most of its length, discharging into the Flambeau about four miles above its mouth. The basin's total drainage is about 250 square miles.

## BONANZA RIVER

For the upper half of its thirty-mile length Bonanza River trends southward through steep mountains over a thousand feet high; thereafter the river winds its way southeast across a marshy flat to Norton Sound. The river falls one hundred feet fifteen miles across this flat. Above that, the gradient increases rapidly. Bonanza River drains about 125 square miles.

## SOLOMON RIVER

Solomon River follows a generally southward course for twenty miles to reach Norton Sound. In its upper ten miles it is confined to a narrow valley between mountains about a thousand feet high. Below that the hills drop to several hundred feet high and in its last two miles the river splits into several channels which meander across a lake-dotted flat to the sea. A considerable amount of dredging has altered the course of Solomon River and the tributaries of Shovel and Big Hurrah creeks. East Fork is the Solomon's other major tributary. It is eight miles long and falls over six miles in that distance. Miners have built ditches to tap water from its upper four miles. The entire basin encompasses about 130 square miles.

## FISH RIVER

The waters from the south side of the Bendeleben Mountains and the west side of the Darby Mountains find their way to Golovnin Lagoon through the Fish River. The river rises in the Bendeleben Mountains at an elevation of over fifteen hundred feet. In fifteen miles it drops to only two hundred feet above sea level; a height from which it falls gradually in its remaining seventy-seven miles to Golovnin Lagoon. Near the two-hundred-foot level the Fish enters the 150-square-mile McCarthys Marsh, where the waters of numerous creeks and lakes add to the Fish's volume. The river meanders severely within this lake-dotted flat, though it maintains a general southerly route. At river mile 50 the stream leaves the marsh behind and passes for nearly twenty miles between slopes which gradually climb to the fifteen hundred feet range. From a short distance above its major tributary, Niukluk River, to a couple miles below Fox River, the Fish River traverses another swampy area. It then passes between low-lying hills before turning to the southeast into its delta and splitting into about a half-dozen channels. The Fish River basin encompasses twenty-two hundred square miles.

## Boston Creek

Forty-mile-long Boston Creek has its origin in the Bendeleben Mountains west of the headwaters of the Fish River and flows southeasterly to the main stream. It is moderately braided in its upper half as it courses between mountains exceeding two thousand feet high. The lower half of the creek meanders through McCarthys Marsh. In Boston Creek's lowest twenty-one miles, it has an average gradient well under ten feet per mile.

### Pargon River

Pargon River is thirty-seven miles long and follows a southeasterly course to the Fish River. It becomes increasingly braided in its highest nine miles before it emerges from the Bendeleben Mountains into McCarthys Marsh. The river drains the western and southern part of this flat before reaching the Fish River. In all, the Pargon's basin encompasses nearly 150 square miles.

### Rathlatulik River

Rathlatulik River rises between Mount Kachauik and Mount Arathlatuluk at the southern end of the Darby Mountains. It flows northwesterly thirty miles to strike the Fish River just below Pargon River. The upper half of its length is in the mountains; the remainder meanders through McCarthys Marsh. Its drainage includes about seventy-five square miles.

### Niukluk River

For nearly twenty miles, the Niukluk flows southwest from its sources east of Mount Bendeleben in a channel which in places is braided. Then, at the confluence of Libby River, it pivots to the southeast, a course which it holds for its remaining thirty-eight miles to the Fish River. It strikes the Fish near river mile 27. Except for a rather restricted area between Goldbottom Creek and Melsing Creek, the Niukluk is in a marshy valley on its southeasterly course, a valley which broadens to several miles wide near the river's mouth. Below Libby River, the Niukluk drops about 225 feet. The Niukluk's largest tributary is Casadepaga River which flows northeast thirty miles to reach the Niukluk at river mile 29.

### Steamboat Slough

Although termed a slough, this water body is a fourteen-mile-long, left-bank tributary of the Fish. It meanders through a broad lake-studded valley to a confluence with the mainstream at river mile 21. Steamboat Slough falls less than fifty feet in its lowest eight and one-half miles and about twenty-five feet in the last five miles.

### Klokerblok River

The Klokerblok River rises in a series of hills which also drain to the headwaters of the East Fork Solomon River. The Klokerblok trends in a generally easterly direction for thirty-nine miles to enter a distributary in the Fish River delta. After meandering between four-hundred- to six-hundred-foot-high hills for fifteen miles, the river winds its way through a marsh area one to two miles wide. Nine-mile-long Skookum River, which also drains the hills east of the East Fork Solomon River, is the Klokerblok's longest tributary and reaches the mainstream at river mile 27.

### YUONGLIK RIVER

Heading at about one hundred feet above sea level, the Yuonglik River flows southward in a sinuous course for twelve miles to empty into the northern end of Golovnin Lagoon. Throughout it is a single-channel stream and its gradient is rather gentle; the river falls fifty feet in its lowest nine miles. It runs between hills several hundred feet high in its upper half. The Yuonglik then becomes more tortuous and enters a lake-filled marshland which gradually broadens as the river approaches the sea.

## KACHAUIK CREEK

Kachauik Creek runs south for eight miles and then shifts slightly to the southwest for its remaining eight miles to Golovnin Lagoon. At river mile 10.5 Kachauik receives Eagle Creek, its largest tributary. Eagle Creek and Kachauik Creek above Eagle Creek both flow between hills up to one thousand feet high. In its lower half the Kachauik becomes braided with sand or gravel bars. The creek falls fifty feet in its lowest seven miles and twenty-five feet in its lowest four miles.

## KWINIUK RIVER

Kwiniuk River is fifty miles long and flows northeast for thirty-three miles along the southern flank of the Darby Mountains before turning to the southeast to enter Norton Bay. It has a gentle gradient in its lowest seventeen miles, falling only fifty feet in that distance. Kwiniuk River drains over two hundred square miles. Nearly all of the river is in the former Norton Bay Native Reservation, currently held by the Elim Native Corporation.

## TUBUTULIK RIVER

Tubutulik River is over seventy miles long and drains four hundred square miles on its generally south-southeasterly course to Kwiniuk Inlet of Norton Bay. Near river mile 68 it begins a thirteen-mile course through a marshy, lake-dotted flat called Death Valley, in which the river falls from 575 to 475 feet above sea level. Mountains rising to above a thousand feet then restrict the river to a narrow valley down to about river mile 20. There, at an elevation of little over fifty feet above sea level, the Tubutulik flows out onto wet tundra across which it tortuously makes its way to the coast. For approximately these same twenty miles the river passes through Elim Native Corporation lands, formerly the Norton Bay Native Reservation. A few miles from the ocean the river splits into two mouths.

## KWIK RIVER

Kwik River takes a south-southeasterly route for thirty miles from a low divide with the Koyuk River to Norton Bay. Its basin encompasses two hundred square miles. Near river mile 25 it begins to leave the low hills of its origin behind and enter a wet tundra area dotted with lakes. The gradient in these lowest twenty-five miles averages only a foot per mile. For its last twenty-four miles the Kwik passes through the former Norton Bay Native Reservation, which Elim Natives have taken in lieu of other rights under ANCSA.

## KOYUK RIVER

The Koyuk River begins at a pond a short distance north of Kuzitrin Lake and flows over 150 miles to Koyuk Inlet of Norton Bay. It travels in a generally eastern direction for 125 miles. At the confluence of its East Fork (river mile 25.5), the Koyuk swings south, entering a wet tundra region near river mile 16, and broadening to a half mile wide. The river has an extremely shallow gradient. In its lowest fifty-five miles it drops only twenty-five feet and it reaches fifty feet above sea level over one hundred miles upriver from Norton Bay. The Koyuk drains nearly two thousand square miles. Its largest tributaries are Peace River, which has its mouth at river mile 53.5, and the East Fork, both left-bank streams. Other sizeable tributaries are Knowles, Big Bar, First Chance, Copper, Salmon, Willow, Kenwood, and Dime creeks.

## INGLUTALIK RIVER

The Inglutalik River flows southwest over one hundred miles to the head of Norton Bay draining a thousand square miles. It has its origins on the northwest fork of Traverse Peak and passes between the moderate-sloped Nulato Hills, which exceed fifteen hundred feet in elevation, down to Nigikmagoon Creek at river mile 50. Below that point hills, rarely above four hundred feet, separate the Koyuk River and the right back of Inglutalik River. Thousand-foot-high hills continue on the left bank, but at a greater distance as the Inglutalik approaches the sea. For its lowest sixteen and one-half miles, the river passes through wet tundra.

The Inglutalik has a low gradient. In its lowest sixteen and one-half miles, the Inglutalik falls only twenty-five feet. The gradient remains low. The river level reaches fifty feet at river mile 32 and one hundred feet about ten miles farther upstream. Then in a space of a half mile the Inglutalik climbs to 125 feet. Then the river again flattens out; it does not ascend to 150 feet for another ten miles, to 250 feet until river mile 63, to 500 feet until about river mile 83, and to 1,000 feet until above river mile 100.

## UNGALIK RIVER

Roughly paralleling the Inglutalik, the Ungalik flows for nearly one hundred miles to Norton Sound beginning at the south side of Traverse Peak. It drains nearly seven hundred square miles. For its uppermost twenty to thirty miles, the Ungalik meanders between mountains which reach more than two thousand feet. Thereafter, the peaks tend to be lower, but slopes rising to over a thousand feet persist within a couple of miles on one side or the other of the river to the Ungalik's lowest few miles where it meanders across a low tundra to the sea. Above river mile 25, the stream is confined to a single channel. Below that point, the Ungalik is slightly braided.

The Ungalik is steeper than the Inglutalik. It falls 100 feet in its lowest twenty-nine miles. The river passes the 500-foot gradient at river mile 53 and the 1,000-foot gradient at river mile 81.

## SINEAK RIVER

Sineak River's headwaters originate in a number of small lakes thirty feet above sea level. The stream then meanders southward for eight miles through a vast lowland tundra east of the Reindeer Hills.

## SHAKTOOLIK RIVER

The one-hundred-mile-long Shaktoolik River begins wending its way northward from its source east of Debauch Mountain, near the headwaters of the Nulato River. It eventually drains 850 square miles into Norton Sound. For its first twenty miles on its northerly course and the next ten miles in a westerly direction it runs in a single channel between hills which rise to two thousand feet. Farther downstream the hills decrease in elevation; those below Kingmetolik Creek generally do not exceed twelve hundred feet. From several miles above Kingmetolik Creek the Shaktoolik begins to exhibit intermittent braiding. Several miles below this creek the river turns southwest. Twenty miles from its mouth in Shaktoolik Bay the river leaves the mountains behind and meanders westerly across wet tundra. The Shaktoolik's gradient is moderate for all but its headwaters. Across the coastal tundra the river falls at six to eight feet per mile; the average gradient to river mile 84 is under twelve feet per mile.

## **TAGOOMENIK RIVER**

Tagoomenik River is nearly thirty miles long. It begins amid hills a thousand feet high and runs north-northwesterly for about ten miles before leaving the uplands to meander northwesterly across a strip of wet tundra. For its last three miles it parallels the ocean shore behind a narrow strip of land to enter into southern Shaktoolik Bay. Through the lake-dotted tundra the river falls a little over one hundred feet.

## **EGAVIK CREEK**

Egavik Creek flows southwesterly about thirty-five miles from slopes fifteen hundred to two thousand feet high. Hills continue to rise along both its banks all the way to the coast, though their height declines to about five hundred feet and the valley in which the stream runs gradually broadens. Marshes cover much of the valley's bottom for the lowest twenty miles. In this area the creek is slightly braided, but here as in its upper portion Egavik Creek is normally a single-channel water body. Even in its lowest few miles, the gradient is somewhat in excess of ten feet per mile.

## **UNALAKLEET RIVER**

The waters of over two thousand square miles find their way to the east end of Norton Sound through the Unalakleet River. The river is over one hundred miles long and trends in a roughly southwesterly direction. After running in a valley less than a third of a mile wide for its first ten miles, the Unalakleet enters a broader valley, which is marshy in places above Old Woman River and in all but a few miles below that tributary. It exhibits considerable braiding near Stove Creek and some braiding elsewhere. As it enters the broader valley at river mile 91 it is 600 feet above seal level. Just below Old Woman River at river mile 65, the Unalakleet descends below the 200 foot mark. It reaches 100 feet near river mile 52 and 50 feet at river mile 30.

### Old Woman River

Old Woman River extends northward in a confined valley for almost fifty miles between mountains over fifteen hundred feet high. It is a single-channel stream and drains about three hundred square miles. The river falls three hundred feet in its lowest twenty-five miles and fifty feet in its lowest eight miles.

### North Fork Unalakleet River

For nearly forty miles the North Fork winds its way southwest between mountains over two thousand feet high near its source to about a thousand feet high just before the river enters the marshy valley of the Unalakleet. The fork's lowest four miles are within this valley. Except in a small number of places most prevalent in its lower course, the fork flows in a single channel.

### Chiroskey River

The Chiroskey River drains over three hundred square miles in its north-northeasterly course to join the Unalakleet River at river mile 24. The river is over fifty miles long and makes its way between hills a couple thousand feet high until it reaches the marshy Unalakleet valley, across which it flows for about ten miles. In this ten miles the river falls about one hundred feet.

### South River

South River parallels Chirokey River, flowing to the northeast for about forty miles. It enters the Unalakleet about five and one-half river miles from the sea.

### North River

The North River parallels the North Fork Unalakleet River. It heads near the Shaktoolik River and flows through the one- to two-thousand-foot-high Nulato Hills. It empties into the Unalakleet at river mile 5.

### **GOLSOVIA RIVER**

Golsovia River originates in mountains over two thousand feet high. It flows northward fifty miles, on the way receiving tributaries which emanate from many small scattered ponds six hundred to fifteen hundred feet above sea level. Many of these ponds reach the river via creeks which tumble down a gorge in which the river runs below a point about 850 feet above sea level. The river's gradient is steep; even in its lowest two miles it falls nearly fifty feet.

### **KLIKITARIK RIVER**

Klikitarik River flows fourteen miles in a northerly direction to Klikitarik Bay of Norton Sound. It drains small lakes similar and to the west of those which empty into Golsovia River. The Klikitarik is a very steep river, falling twenty-five feet within a half mile of the coast and five hundred feet in its lowest six miles.

### **NUNAVULNUK RIVER**

The Nunavulnuk River is about thirty miles long and courses its way northwest to St. Michael Canal. After its first seven or eight miles and about 350 feet above sea level the river enters an area of scattered small lakes. In the following nineteen miles it falls over 325 feet. For its lowest three miles the Nunavulnuk winds amid innumerable small lakes and drops less than twenty-five feet.

### **KUIAK RIVER**

The source of the Kuiak twenty-five-mile-long Kuiak is amid mountains over one thousand feet high, but within a few miles the northward-trending stream plummets to under 500 feet above sea level and begins its way across a lake-dotted flat. The river's gradient continues to decrease. At river mile 23.5 the Kuiak is over 400 feet above sea level. This drops to 250 feet at river mile 21 and to 25 feet at river mile 14. Thereafter the river widens markedly and its large bends twist gracefully between an increasing number of small lakes.

### **KOGOK RIVER**

The Kogok River follows a rough northwest direction for thirty-three miles to enter Norton Sound one mile northeast of Pikmiktalik River. The upper seven miles of the Kogok, as well its three longest tributaries--Nunakogok River, which discharges into the Kogok at river mile 18, and two unnamed streams entering the Kogok at river miles 25 and 7--drain northward through hills eight hundred feet or more high into a large lake-dotted coastal marsh. Once it enters this marsh the Kogok's gradient flattens out.



At river mile 21 the river is 250 feet above sea level. It drops to 200 feet at river mile 10, to 50 feet at river mile 7, and to 25 feet at river mile 5.

#### **PIKMIKTALIK RIVER**

The Pikmiktalik River has its origins at a thousand feet above sea level and flows forty-five miles to Norton Sound. In its first eight miles the river falls five hundred feet and twists from a southwesterly course to one heading due north. It continues north and then northeasterly for over fifteen miles in a valley bounded by seven-hundred- to thirteen-hundred-foot hills, before entering a lake-dotted coastal flat. Before leaving the mountains the Pikmiktalik falls to under two hundred feet. Nearer its mouth, the gradient becomes quite shallow; it falls less than twenty-five feet in its lowest eight miles.

## NOTES

1. Lidia L. Selkregg, Alaska Regional Profiles: Northwest Region (n.p., n.d.), 3; Clyde Wahrhaftig, Physiographic Divisions of Alaska, U.S. Geological Survey Professional Paper 482 (Washington, D.C.: Government Printing Office, 1965), 20-21, 27-28, 31, plate 1. Except for drainage areas which come from U.S. Army, Corps of Engineers, Alaska District, Harbors and Rivers in Alaska, Survey Report: Northwestern Alaska (n.p., 1957), 31-33, and in a handful of cases otherwise noted, all information on the physical character of Northwest Alaska presented in this chapter comes from U.S. Geological Survey maps based on aerial photography taken in the 1950s. When river miles disagree with those found in Donald J. Orth, Dictionary of Alaska Place Names, U.S. Geological Survey Professional Paper 567 (Washington, D.C.: Government Printing Office, 1967) or the Corps of Engineers, they are derived from the "Storet Maps" in the Navigability Section's files.
2. Selkregg, Alaska Regional Profiles, 8, 16-17, 23.
3. Ibid., 129-37.
4. Ibid., 142-56; Richard O. Stern, Edward L. Arobio, Larry L. Naylor, and Wayne C. Thomas, Eskimos, Reindeer, and Land, Agricultural Experiment Station Bulletin 59 (Fairbanks: University of Alaska, 1980), 101.
5. Selkregg, Alaska Regional Profiles, 169.
6. Ibid., 85-93; Anchorage Daily News, October 24, 1982, p. E-1.
7. Orth, Dictionary of Alaska Place Names, 989.
8. Philip S. Smith, The Noatak-Kobuk Region, Alaska, U.S. Geological Survey Bulletin 536 (Washington, D.C.: Government Printing Office, 1913), 28.
9. Ibid., 21.
10. See Chapter 2 for an overview of mining in this area. See Chapter 3 for a discussion of the Corps of Engineers' work on the Snake River.
11. Arthur J. Collier, Frank L. Hess, Philip S. Smith, and Alfred H. Brooks, The Gold Placers of Parts of Seward Peninsula, Alaska, U.S. Geological Survey Bulletin 328 (Washington, D.C.: Government Printing Office, 1908), 171.

## CHAPTER TWO

### NORTHWEST ALASKA'S DEVELOPMENT

Alaska's Northwest has hosted a variety of people who sought to sustain and improve their lives by following widely differing economic strategies. Inupiaq and Yupik Eskimos hunted, fished, and trapped for generations before contact with the Russians and white Americans. Russians visited the region in the eighteenth and early nineteenth centuries, as did American Western Union employees in the mid-1860s, without having any marked impact on Native lives. Whaling ships touched the Alaskan coast and missionaries and occasional explorers came to the region in the late nineteenth century. Sheldon Jackson and a group of missionaries he aided as federal Education Agent, sought to alter the Natives' physical, as well as spiritual state, by importing reindeer to the Seward Peninsula in 1892. Some readily adopted reindeer herding as their primary occupation, but most maintained their traditional ways. The first large white influx came in 1898 when hundreds flocked in a false gold stampede to the Kobuk River. Nearly all of them quickly withdrew southward. However, thousands of whites rushed to the Seward Peninsula after the rich finds near Nome in 1898 and 1899. Within a few years these men and women had prospected most of the peninsula and permanently altered its history.

In the early twentieth century whites established a second society in Alaska's Northwest revolving around mining settlements. They replicated western business, governmental, religious, and social institutions in Nome and to a lesser extent in smaller communities. These outposts depended on their links to Seattle and San Francisco. Natives partook in a small measure in this second society, taking jobs, conducting trade, and finding entertainments. Many built homes near the schools the Bureau of Education built between 1907 and 1910, forming permanent, if in many cases seasonal, villages. However, most continued to rely upon a varying mixture of reindeer herding, hunting, fishing, trapping, and berry picking.

Most changes in the past three-quarters of a century have been a continuation of trends apparent by the 1910s. Natives still depend heavily on subsistence activities and some on the Seward Peninsula operate reindeer herds. They increasingly have taken wage jobs, purchased western goods, and concentrated in settled communities. Gold mining is still important for Seward Peninsula's economy, but so are government work and, on the Norton Sound, fishing. There has been smaller and less persistent mining in the Kobuk drainage. Post - World War II exploration has revealed rich deposits of copper and other minerals which some day may be mined. The post-war period also witnessed increased and still-increasing recreational use of Alaska's Northwest furnishing employment for guides, restauranteurs, lodge-keepers, and pilots.

Archeology, folklore, and the reports of the region's earliest explorers help to describe the prehistoric culture of Northwest Alaska. Human habitation of the region dates to at least 6000 B.C. <sup>1/</sup> Throughout this period the people of the Northwest have subsisted upon the available flora and fauna. <sup>2/</sup> Doubtless, their precise patterns shifted over the centuries as species' populations waxed and waned. In describing the subsistence pattern that prevailed among Natives of eastern Norton Sound prior to and in the earliest years of white contact, William Sheppard noted that all inhabitants did not follow the same seasonal cycle. Also from year to year, depending upon the availability of resources and the changing needs of an individual, family, or local group, people would

vary their pattern. Because eastern Norton Sound and the Seward Peninsula were on the edge of a number of resource areas--the northern frontier of king and red salmon, the western fringe for caribou, and a marginal walrus and bowhead area--variability may have been particularly pronounced. 3/ However, elsewhere in the Northwest, Natives also altered their seasonal rounds to best utilize resources and meet sustenance requirements.

Maintaining Sheppard's caveat, it is still appropriate to divide the Northwest peoples into marine and riverine economies. The former depended substantially on sea mammals for food and clothing, while the latter lived largely or wholly on fish, caribou, small game, and berries. Dorothy Jean Ray's The Eskimos of Bering Strait, 1650-1898 sketched the marine-oriented life of most residents of the western Seward Peninsula. The Natives of Wales and some of the Strait islands hunted bowhead whales beginning in May. More generally the area's inhabitants sought walrus. Seals were their most important resource, indispensable for meat, oil, and skin. Salmon, which ran in July, were the second most important food source. 4/

Ernest Burch described what he called the Kotzebue society. These people who lived near present-day Kotzebue also depended heavily upon the sea. In the fall and again in February and March, they fished through the ice at scattered settlements for sheefish, tomcod, and smelt and some hunters pursued caribou. In February some men hunted seals; by April everyone concentrated along the coast to harvest seals. In late June the emphasis shifted to killing dozens or even hundreds of belugas. Not until late August did the Natives again disperse to their winter villages and renew their subsistence cycle. 5/

Other people pursued sea mammals in the summer just as the Wales and Kotzebue inhabitants, while in addition exploiting in a major way the resources of a riverine environment. For example, both the Koyuk River and the lower Noatak River Natives caught seals and belugas in the spring and summer. But they also took large numbers of salmon and hunted caribou. 6/

The inhabitants of the upper Kobuk River and, to a somewhat lesser extent, the Fish River followed a riverine subsistence pattern. In the fall the Kobuk people hunted caribou, bear, and a variety of smaller game and fished with weirs and hooks through the thin ice. They generally rested and recreated until the spring when they spread out along the river and its tributaries to hunt muskrat and to fish. Most continued to fish through the summer, although a few families traveled down to the Kotzebue area to trade and hunt sea mammals. In late July the men left the women, who continued fishing, in order to hunt caribou. The men rejoined the women in the fish camps in early September.

On the Fish River, some Natives trapped fish in the winter. In spring most moved to the squirrel trapping grounds, although others hunted bearded seals on the coast. After breakup they fished and trapped muskrat and shortly after that began snaring birds. They turned their attention to salmon once the runs started. The Fish River people also collected a variety of plants and berries and in late summer killed caribou in fences and corrals or in Kuzitrin Lake. Early in the fall Natives took young seals, which swam up the lower Fish River, before returning to their winter villages after freeze up. 7/

These fundamental patterns of subsistence living probably prevailed in Northwest Alaska for centuries prior to white men's arrival. Indeed, although this was the first part of Alaska reached by Russian explorers, change came very slowly to the region. For well over a century after the Russian imperial missions of Vitus Bering, who spotted

St. Lawrence Island and Big Diomed Island in 1728, and Mikhail Gvozdev, who sailed near Wales and King Island in 1732, whites did little more than chart the outline of the coast. In 1778 James Cook coursed along the shore and gave names to Norton Sound, King Island, and Cape Prince of Wales. The Russian explorers Otto von Kotzebue, Glib S. Shishmarev, and Mikhail N. Vasiliev substantially completed white discovery of the Northwest coast by probing Kotzebue Sound between 1816 and 1820. 8/

One of the last British exploration parties, Frederick W. Beechey's of 1826 and 1827, set the stage for more European and American visits to Alaska's Northwest. Beechey's published report of 1831 described the plentitude of whales in the North Pacific. Beginning slowly in the 1830s and early 1840s, commercial whaling in the Bering Strait attracted scores of ships annually by the latter third of the century. In the 1880s Port Clarence became a regular stopping point for ships heading north. In this sheltered inlet whaling captains made repairs, took on water, and awaited tenders which brought coal for the increasing number of steam vessels. From Port Clarence the whalers traveled to Point Hope, which they reached about July 10. Here they took on more fresh water and traded with the Natives, often obtaining their labor for the summer on whaling trips in the area. The Point Hope people obtained flour, crackers, tobacco, molasses, and firearms. They also got liquor when the men of a U.S. Revenue Marine cutter, which patrolled the waters annually beginning in 1880, were not looking. In the 1880s various whaling companies began setting up stations in the vicinity to enable them to conduct whaling from shore; by 1898 there were thirteen such stations between Point Hope and Cape Seppings. Natives from as far away as the Kobuk River came to work in whaling boats sent out from these stations. 9/

The whaling outposts were the primary Euroamerican contact points in the northern part of the region. However, in the south St. Michael served since 1833 as a Russian and, after 1867, and American trading center. St. Michael, though, looked east and south to the lower Yukon, rather than to the Northwest. The geographic accident of inadequate harborage nearer the mouth of the Yukon prompted the Russian traders to place their outpost on an island in Norton Sound. From St. Michael or Unalakleet, explorers and traders regularly crossed the Anvik and Kaltag portages to the Yukon. In the process of regular missions to Nulato, Russian traders became familiar with the Unalakleet drainage. 10/

Europeans first probed the interior of the Seward Peninsula in the 1850s. In 1848 Great Britain initiated a series of search parties for the lost Arctic expedition of Sir John Franklin. Some search ships wintered along the Northwest coast. In March and April of 1850, Lt. Bedford Pim traveled overland from Kotzebue Sound to St. Michael via the Koyuk River investigating rumors of whites on the peninsula. The following winter a detachment from the Plover traveled overland between Port Clarence and St. Michael. In 1854 another small group crossed the peninsula from Port Clarence to Chamisso Island in eastern Kotzebue Sound via the Kuzitrin and Goodhope rivers. 11/

Between 1865 and 1867 Americans explored Northwest Alaska to lay out the route of a proposed Western Union line from the United States to Europe via Siberia. Numerous WU parties traversed the well-known Kaltag portage through the Unalakleet basin. Others traveled along the coast of Norton Sound and through the Fish River and lower Kuzitrin River drainages to Grantley Harbor. In December 1865, six employees sledged north from Unalakleet, passed Shaktoolik and another village called Inglutalik and a short distance up the Koyuk River. R.D. Cotter led another group about twenty-five miles up the Inglutalik in April 1866. 12/

In September 1866, Daniel B. Libby led about forty WU men to Port Clarence. Libby was in charge of construction from that point east to Golovnin Bay via the Kuzitrin, Niukluk, and Fish rivers. He traveled the entire distance twice determining the most favorable route. Despite poor provisioning, his party completed twenty-three miles of the telegraph line near Grantley Harbor in the winter. WU employees erected seven more miles near Golovnin Bay and seventeen near Unalakleet. 13/

In 1867 Western Union abandoned its efforts for the trans-Siberian telegraph after the successful laying of a cable under the Atlantic. That same year the United States purchased Alaska, but it proved no more aggressive in mapping beyond the coastline of the Northwest than had the Tsarist government. Not until 1883 did Naval Lieutenant George M. Stoney enter the Kobuk using a U.S. Revenue Marine boat from the Corwin, then at Kotzebue, and accompanied by a Revenue Marine seaman. Stoney was in the area on a mission to reward Siberian Natives and found himself with time on his hands. Stoney and the Revenue Marine's captain of the Corwin, M. A. Healy, both were enthusiastic about exploring the Kobuk. As a result in 1884 and 1885, the Navy sent Stoney to explore the river while the Revenue Marine dispatched Lieutenant John C. Cantwell. The two services examined the Kobuk as well as the Noatak and Selawik independently collecting a wide range of data, including geologic, hydrologic, ethnographic, and biologic information. Maps which they prepared were not as accurate as those the U.S. Geological Survey would draft. But they did indicate major tributaries and other physical features as well as the location of Native settlements. Along with the Unalakleet drainage, the Kobuk-Noatak area would be the only well-charted interior portion of Northwest Alaska until the turn of the century. 14/

White man's religion came to much of Northwest Alaska by 1890. Through the efforts of missionaries, Natives learned not only of westerners' god, but also received western schooling and an introduction to western ideas and goods. Russian Orthodox Priest Gregory Golovin of Unalaska was the first missionary in the region, arriving at St. Michael in 1842. Doubtless at his instigation, the Russian American Company completed a chapel there by 1845. However, not until 1900 did a Russian Orthodox priest live at the settlement.

In 1883 Reverend P. F. Healy, S.J., brother of the captain of the Corwin, traveled the coast visiting settlements as far north as Point Hope. Later in the decade the Roman Catholic Church had a school at St. Michael, but otherwise the Catholic missionaries did not penetrate the pre-gold-rush Northwest. Swedish missionaries ran a school at Unalakleet beginning at least by 1889. In the next two years the Federal government contracted for schools at Wales, Point Hope, and on St. Lawrence Island, with the Congregationalists, Episcopalians, and Reformed Episcopalians, respectively, as well as with the Swedish missionaries at Unalakleet. Within a few years, missionaries also came to Port Clarence and Cheenik and Friends arrived at Point Hope. 15/

Led by Sheldon Jackson, a Presbyterian minister and the Federal government's Agent for Education in Alaska, reindeer herding became part of missionaries' civilizing plans for Northwest Natives. The reindeer, which Jackson first brought to Port Clarence in 1892, were to provide Natives with food and a practical means of learning and succeeding in a commercial enterprise linked to white society. The Natives could master modern business skills while providing themselves and western markets with meat and transportation. 16/

In the first years of activity the herds remained in the Teller area, first with imported Siberians and later Lapp herders teaching Natives the care of the animals. By 1895

Jackson sent reindeer from Teller to Wales and Golovnin Bay to start new herds at these mission outposts. Natives to this time herded but did not own the reindeer. In the following year Jackson loaned Charley Antisarlook one hundred deer; however, even in 1899 only eleven Natives owned animals. As the government's herds grew to number over two thousand in the late 1890s, Jackson continued to expand operations. In 1897 and 1898 he shifted the headquarters for herding to Eaton, a new station near Unalakleet. In the following decade, reindeer spread to a growing number of missions through the Northwest, including Kivalina, Kotzebue, Deering, Shishmaref, and Gambell.

Coastal whaling, occasional government explorations, and the efforts of missionaries left only a modest imprint on Alaska's Northwest and brought few whites to the region. Change may have come very slowly had not George Carmack and two Indians made the bonanza discovery in the Klondike six hundred miles to the east in September 1896. The news of the find ignited a wildfire of enthusiasm for seeking gold in the north, which was unfocused enough to propel Americans to the Kobuk River and the Seward Peninsula.

There had been some mining in the upper Fish River drainage as early as the 1880s. In 1880 a whaling schooner captained by William P. Gallagher traded sea biscuits with Natives in Golovnin Bay who offered to take him upriver to fish for salmon. The Natives also showed Gallagher silver-bearing ore near their fish camp. Gallagher brought a sample back to San Francisco where it was assayed at thousands of dollars per ton. Investors organized a company and in May 1881 they sailed to Seward Peninsula to exploit what became known as the Omilak mine. By August 11, they began floating the ore down to Golovnin Bay in Native skin boats. In the summer of 1883, twenty men took fifty-five tons out of the mine. Production continued in the eighties but probably did not exceed four hundred tons of silver ore. New financing promised increased activity in the century's last decade, but plans to use a steamer and build a tramway to the coast failed. Little mining took place after the early 1890s until renewed efforts between 1906 and 1910. Again activity petered out. In 1922 there was one last unsuccessful try at mining at Omilak. 17/

It was ironic that silver rather than more valuable and very plentiful gold was the subject of the first mining in Northwest Alaska. It also was ironic that the first stampede to the region focused on the Kobuk River rather than the more accessible and far richer Seward Peninsula. For reasons which are not clear, rumors of gold on the Kobuk followed hot on the heels of the news of the strike on the Klondike. Consequently, prospectors, possibly numbering more than a thousand, steamed and sailed to Kotzebue Sound in 1898. In contrast to the Klondike and later the Nome stampedes, town-builders-- businessmen, professionals, and service-oriented workers--did not accompany the gold-seekers. Therefore, the Kobuk stampeders, many of whom were novice prospectors, had to invest considerable effort to furnish their own needs. They built and piloted their steamboats up the river, poled smaller boats up tributaries and packed beyond the reach of boats, erected their cabins, and, except for what they bought from Natives, brought or hunted for their food. And when the little prospecting they did proved disappointing, they left. 18/

Some were so disgusted, home sick, or broke that they did not take part in the rush to the genuine bonanza at Nome. The gold finds of the Seward Peninsula had their roots in the earlier exploration, religious, and mining activity of the area. The Western Union's Daniel Libby, while traveling along the Niukluk in 1866 or 1867, found strong indications of gold. However, Libby was content to make his living in California until the Klondike

fever rose in the nation. Libby organized a group based in San Francisco, including his brother-in-law Louis Melsing to pursue his thirty-year-old discovery. Libby's group landed at Cheenik on September 18, 1897. There they found that other men also knew there was gold on the Niukluk. John Dexter, who had previously worked on a whaling ship and in the Omilak silver mine, for five years had had a trading post at Cheenik. He may have found gold signs on the Niukluk as early as 1891. In 1895 he grubstaked a prospector who brought gold out of the area. The Libby party made several prospecting forays upriver that fall, but they did not hit pay dirt until they found and named Melsing and Ophir creeks in the spring of 1898. In late April they, along with two missionaries at Cheenik and a doctor associated with the reindeer service, founded a mining district. Shortly thereafter these men established the city of Council. Later in 1898 hundreds of gold-seekers worked the area's streams and although their technology was simple, they may have extracted \$100,000 in gold. 19/

There are conflicting claims on who discovered gold just north of present-day Nome. Terrence Cole, who recently completed a study of the controversy, concluded that one of the Cheenik missionaries, Reverend Nels Hultberg, discovered a prospect on Anvil Creek in August 1898. At the time he was with a group including H. L. Blake, one of Libby's original partners, intent on prospecting the Sinuk River. Their boat encountered a storm enroute and sought the shelter of the Snake River. Hultberg had had a falling out with Blake and therefore kept his discovery a secret until he returned to Cheenik. By then he was too ill to return to the Snake River, but he passed on his information to the "three lucky Swedes"--Jafet Lindberg, a former reindeer herder, Eric Lindblom, who abandoned a whaling ship at Port Clarence in the spring of 1898, and John Brynteson, a miner from Michigan. The three became partners at Council in July. After hearing from Hultberg they boated up to Snake River and panned the magnificently rich soils of the river's tributaries of Anvil, Glacier, Rock, and Dry creeks. 20/

The story of what followed is well known. Nome grew out of the tundra as thousands of would-be gold tycoons abandoned the Klondike, Kobuk, and Koyukuk in 1899. The rush might have slowed after all the Snake River and Nome River creeks were staked. However, men then found easy and abundant wealth in Nome's beach sands and the rush to Nome swelled in 1900 to nearly twenty thousand newcomers. That year miners retrieved \$3.5 million from the beach and the tributaries of Snake and Nome Rivers. 21/

The Nome discovery directly affected nearly every aspect of the development of the Seward Peninsula in the subsequent years, including its rapid exploration, the growth of communities, and the creation of a transportation network. Word of the area's wealth prompted as many as twenty thousand people to rush to the peninsula in 1900. Only a fraction of these could or chose to work on the Niukluk, Snake, and Nome finds. Many labored on the beaches. But many men wanted to claim their own Eldorado and so raced about the peninsula staking out grounds. Some of these prospectors did more staking than digging in hopes that someone would find gold near one of their claims and thus help them focus on what area to concentrate their mining efforts. 22/ Still, this overflow of prospectors probed virtually all of Seward Peninsula by the end of 1901, resulting in scores of minor gold placer operations and a few areas of major development.

In 1900 the peninsula yielded between four and five million dollars of gold. Snake River and Nome River tributaries and the Nome beach comprised all but about a million dollars of the total. 23/ The peninsula's production swelled to seven million dollars by 1906, but thereafter declined steadily leveling off to the one-to-two-million-dollar range for the 1920s. 24/



Without the introduction of capital and the expensive techniques and technology it afforded, production would have shrunk faster and more dramatically. 25/ The swarms of beach miners took out practically all the gold in Nome's sands by the end of 1900 and the easiest-worked creek and bench placers were largely exhausted within a few years. Lack of water hindered sluicing. Therefore, miners with valuable ground and sufficient capital invested in ditches; ditches cost \$1,000 to \$2,500 per mile. W. L. Leland and J. M. Davidson built a portion of the Miocene Ditch in 1901, the first on the peninsula. It took water from upper Glacier Creek a few miles down to Snow Gulch. By 1903 the Miocene ditch stretched to bring water from the head of Nome River to the Snake drainage. By 1906 four ditches tapped the waters of Nome River, interlacing the streams of the Snake and Nome drainages. 26/

Their success prompted imitation. In 1902 the Topkok Ditch Company began construction of a twenty-one-mile line bringing water from the Klokerblok River to rich deposits near the mouth of Daniels Creek. 27/ The various placer creeks draining into the Kougark River produced only small amounts of gold until ditches brought sufficient water to the claims starting in 1903. 28/ In the same year miners excavated ditches for placers in the Bluestone and Solomon drainages and in 1904 in the Cripple River basin. 29/ In the next three summers men labored to run ditches to claims in the American 30/, Casadepaga 36/, Inmachuk 32/, Iron Creek 33/, Kiwalik 34/, Noxapaga 35/, Penny 36/, Serpentine 37/, Sunset Creek 38/, and West Fork Buckland drainages 39/.

The arrival of dredges further signaled capitalists' displacement of the pan-and-rocker operator. Dredges appeared on the Snake River in the summer of 1900, though they apparently failed. The machines began clawing along the Niukluk and Solomon rivers in 1903. 40/ Within five years dredges returned to the Nome and Snake drainages. 41/ By 1911 seven dredges worked the last two basins, eight dug in the Solomon drainage, four mined the tributaries to the Niukluk near Council, and two were in the Casadepaga Valley. 42/ By 1913 there were more dredges in each of these areas and the machines also were taking gold from Candle Creek, Kugruk River, and the Inmachuk River in the northeastern part of the peninsula, from Sunset Creek, and from Budd Creek, a tributary of American River. 43/ The Kugruk River and Sunset Creek operations shut down quickly and the Inmachuk dredge ceased work between 1918 and 1930. The Casadepaga machines were silent for about a decade before reviving in 1925 and a dredge on Dime Creek in the Koyuk basin started in the 1920s. Otherwise the distribution of dredges remained relatively constant through 1932. 44/ Spurred by the government's increase of gold's value in 1932, miners between 1933 and 1938 resumed dredging on Sunset Creek and initiated it on the Bluestone and Ungalik rivers and Dese and Spruce creeks. 45/

Seward Peninsula mines yielded the vast majority, but not all, of the gold extracted from Northwest Alaska. Before dredges came to the Ungalik in 1938, miners worked claims on its tributary, Bonanza Creek. Most of this occurred up through 1909. 46/ Prospectors early in the century located gold on Midas and Lucky Six creeks on the upper Noatak, but no one ever made a concerted effort to mine gold in this remote area. 47/ Small-scale operators mined the Cosmos Hills north of the town of Kobuk steadily until World War II. In 1909 prospectors found a new gold field in the lower, left-bank area of the Squirrel River basin, a tributary of the Kobuk. Annual production in the Kobuk consequently rose from about \$5,000 for the years 1904 to 1908 to \$20,000 to \$35,000 for 1910 to 1919. 48/

Just as gold mining directly brought few changes to that portion of Alaska's Northwest outside of the Seward Peninsula, so other minerals and fossil fuels did little to attract

development in the region. Limited quantities of low-grade coal came from such divergent points as Cape Lisburne 49/, Kobuk River 50/, Kugruk River, and Coal Mine Creek. 51/ Only the deposits on the Kugruk produced coal consistently for market. Despite its low quality, its proximity made Kugruk coal marginally profitable to sell to gold miners on Candle Creek and the Inmachuk River prior to World War I. 52/

A number of other resources attracted attention. During World War I a couple of mines north of Nome produced at least one hundred and fifty tons of stibnite. 53/ Standard Oil found oil in the Kotzebue Sound in the summer of 1900 and in 1906 and 1918 drilling occurred near Cape Nome. 54/ Miners unearthed silver as a by-product of gold extraction, and prospectors also noted lead, copper, bismuth, tungsten, and mercury on the Seward Peninsula. 55/ Tin attracted commercial operations. Between its discovery in 1901 and 1919, placers on Mint River and its tributaries, Grouse and Buck creeks, yielded over one thousand short tons of tin. Much of this came from dredging which began in 1911. 56/ Less productive tin mining occurred in lodes over the divide in the Lost River drainage; in about half a century of mining beginning in 1904 these deposits produced 350 short tons. 57/

While prospectors hurried about the peninsula in search of golden gravels at the turn of the century, U.S. Geological Survey teams of geologists and cartographers made annual summer treks through the same terrain. Frank C. Schrader and Alfred H. Brooks initiated the Survey's activity on the peninsula when they spent several weeks in October 1899 visiting the placers and mapping the country between the Penny and Nome rivers in the heart of the new gold district. 58/ The following year Brooks led an expedition which used canoes to explore the Fish, Niukluk, Casadepaga, Pilgrim, Kuzitrin, and Kougarok drainages, while Walter C. Mendenhall headed another party which paddled up the Fish, Tubutulik, and Koyuk rivers. That same summer E. C. Bernard led a small mapping party on the southwestern part of the peninsula. 59/ The public demanded proper maps to the northern part of the peninsula after early gold prospects showed up in the area. Consequently, Arthur J. Collier and T. G. Gerdine supervised a group on horseback; Collier explained the switch to horseback, stating that the Survey's staff believed that "thus organized and equipped [they] would be able to cover a larger area than any one party of the previous season. . . . This expectation was realized." Collier and Gerdine's men began at Teller and charted the area toward Wales and the northern Kuzitrin drainage. 60/ The USGS mapped the northeastern part of the peninsula in 1903. Philip S. Smith and Henry Eakin led an overland expedition in 1909 from Nulato to Council which completed the Survey's mapping of the Seward Peninsula. 61/

Since mineral wealth was lacking in other parts of Alaska's Northwest, the USGS was slower to examine areas outside the Seward Peninsula. The Kobuk had some mining and so was visited first. In 1901 Mendenhall led a survey down the Kobuk in Peterborough canoes; in 1910 Smith and Eakin surveyed the same drainage on horseback. Collier charted a small area near Cape Lisburne while examining coal lands in 1904. In 1911 Smith examined the Noatak by canoe. 62/ In connection with examinations of the petroleum reserve north of the Brooks Range, Smith also examined the Aniuk, Kivalina, and Kukpuk drainages by sled in the mid 1920s. 63/

The prospectors who flocked to the Northwest after 1898 congregated in a number of small settlements and generated the need for services which made for other established white outposts. Roadhouses appeared along the trails to the gold fields. Near the mines, such as those on Big Hurrah and Shovel creeks, enterprising souls set up

stores. 64/ The fourteen-by-thirty-foot willow-pole hotel and store built in late 1900 or in very early 1901 at the mouth of the Noxapaga River was known as the settlement of Spooner. Although it is doubtful if it ever had any year-round inhabitants other than those in the store, it became the headquarters of a mining district and had a post office before disappearing altogether by mid-decade. 65/ There were other settlements, some of which had a number of buildings, which rose in the first years of the century, only to disappear within a year or two. Among these were Bering, near present-day Teller; Noxapaga, at the mouth of Turner Creek on the Noxapaga; Checkers, at the mouth of the Kougarok; and Record, at the confluence of the Pinnell and Inmachuk rivers. 66/

However, other communities rose which contributed more substantially to mining development on the peninsula. These included Solomon and Dickson, entrepôts to the Solomon River placers 67/; Deering, Kiwalik, and Candle which supplied operators in the Inmachuk, Kugruk, Kiwalik, and Buckland drainages 68/; and Teller and, after 1906, Shelton to aid miners in the Kougarok and nearby areas 69/. Council, the second most important town of the peninsula was the trading and shipping headquarters for the lucrative Ophir and Melsing creek mines. Supplies reached the town by transferring from ocean vessels to small steamers off Golovin and from steamers to scows at White Mountain, giving some significance to those outposts. 70/ Nome was by far the predominant town of the region. It was as easy to access as any area on the coast and it had the region's richest mines in its backyard. During the rush it acquired an array of facilities and institutions--stores, shops, hotels, restaurants, saloons, churches, courts, social clubs, local government, a school, and a fire department. After the stampede some of the business failed and the courts were less busy dealing with conflicting mining claims and rowdy residents; however, Nome maintained a population in the thousands and continued as the hub of activity for mining in Alaska's Northwest. 71/

The miners traveled between their communities and mines on trails, roads, and in a couple cases, railroads. When Shrader and Brooks of the USGS reached the Nome area in October 1899, they observed that there were "few definite or well-marked trails." However, they stated that the country was open so that "one can without much difficulty proceed in almost any direction." 72/

Schrader and Brooks were speaking primarily of pack-train travel. Pack horses, however, were not the major mode of transport for two reasons. First, the peninsula's grasses only supplied grazing from July through mid-September. Shipping in hay and oats or sending horses south for the winter were expensive. Second, dog sleds provided a much faster mode of travel and transporting light supplies. The U.S. Geological Survey's Fred Moffit observed that prospectors preferred to stake claims in the winter when they could cover more ground in a week than they could in a month in the summer. 73/

The movement of heavy freight or the large supplies of cargo necessary for highly capitalized exploitation of the peninsula's gold, required alternatives to pack train and dog sled travel. Charles D. Lane, whose Wild Goose Mining and Trading Company bought many of the claims on or near Anvil Creek, moved quickly to provide transportation to his mines. By the end of the summer of 1900 the Wild Goose Railroad connected his claims to the coast at Nome. Over the next few years the road expanded modestly, reaching Dexter Creek by 1905. That year Lane sold most of his interest in the line. The new owners spurred construction the following year to the banks of the Kuzitrin River at Shelton. Supplies could thus reach the southern outskirts of the Kougarok mining district from Nome in half a day. However, the line was not profitable and the last engines were pulled off the road in 1910. The road changed hands a number

of times ending up with the Alaska Road Commission in 1922, which maintained the roadbed. Between 1910 and the 1950s dogs, horses, and gas engines propelled various conveyances on the track. While under ARC control, mining companies, common carriers, and private individuals operated these vehicles. Subsequently, the Alaska Road Commission gradually extended a gravel road northward over the old roadbed. 74/

The Wild Goose was not the only attempt at a rail solution to the Seward Peninsula's transportation needs. In the middle of the first decade of the century a seven-mile narrow-gauge railroad connected Council to a mining claim at the confluence of Dutch and Ophir creeks. 75/ The Council City and Solomon River Railroad was a more ambitious project. In 1903 it began extending track north up the Solomon Valley from Dickson, a settlement named after the company's general manager. But the road's life was problematic; the line reached the Casadepaga River in 1906 but ceased operation soon thereafter. 76/ In 1918 the Alaska Road Commission dismantled the track and thereafter used part of the roadbed as a wagon road. 77/

Most mine owners had to rely on roads to supply their operations. In the first years of the century miners built their own roads or, as in the case east of Nome, paid a toll on roads built by others. 78/ However, after 1905 the Alaska Road Commission assumed an increasingly important role in road and trail construction and maintenance. Mine operators and the Nome-Seward Peninsula Chamber of Commerce regularly pleaded with the ARC to extend road service. Commission expenditures immediately infused cash into the local economy. It hired local men who spent their money on the peninsula. After his area's road project was not funded one Candle saloon owner complained that, "if [the ARC] had spent \$3,000 I would have got half of it." 79/ More importantly, a good road dramatically cut the cost of supplying mines, giving some operators greater profit and allowing others to develop marginal fields. 80/

When at all practical miners preferred to move heavy cargo in the winter. In the first years of the century horse-drawn sleds could haul supplies from Nome to the nearby creeks for half the summer wagon rate. 81/ The sleds did not require any improved roadbed, though the Road Commission marked some routes; indeed once the snows melted there often was no trace of the paths of winter travel. 82/

Summer travel was more restrictive. During dry weather wagons could maneuver over some stretches of unimproved tundra. As late as 1921 wagons wandered unmarked routes from Haycock in the Koyuk drainage to Bear Creek. But in many areas soggy and overgrown terrain made wagons impractical. 83/ Miners found that some of the best summer wagon routes lay in riverbeds. The USGS's Fred Moffit wrote that bars along Nome River furnished a good route from Dexter Creek to the headwaters. Adolf Knopf, another USGS investigator, noted that the stream beds north and south of the York Mountains served a similar purpose. 84/ And Thomas A. Richard, who traveled up the bed of the Solomon River, wrote that throughout the Seward Peninsula, "the roads for the most part cling to the river beds, where gravel affords fairly good footing as compared to the soggy tundra; in consequence the road is in the river and the river is in the road." 85/

Beaches also served as natural roadways in some areas. The route from Nome to Teller followed along the coast to Tisuk River which it ascended to cross a divide to Teller. Light wagons could also proceed west on the beach opposite Teller to Lost River, fording Don and California rivers on the way. 86/

Miners fashioned roads from the rail lines to their claims. In 1902 when the Wild Goose Railroad ended at Anvil Creek, roads extended from the terminus and other points on the track to mines. 87/ When the railroad reached the confluence of Iron Creek and the Pilgrim River, Iron Creek miners promptly constructed a road to it. Consequently, their freight rates plummeted from ten cents a pound, the charge via wagon from Nome, to two cents using a combination of rail and road. 88/

Most roads, though, connected with the coast or with an important river. The earliest and the heaviest-used thoroughfares connected Nome and the neighboring fields. In 1900 pack trains and dog sleds reached as far as the Kougarok district by trail from Nome, normally by way of the Nome River. In summer miners would ascend the Kuzitrin in a boat to Checkers, at the mouth of the Kougarok, and then take pack trails to the mines. 89/ Within a few years miners ascended the river to Lanes Landing, later called Shelton, which was the head of scow navigation. From there they could follow relatively high ground northward in wagons to the Quartz Creek mines and then along the Kougarok's banks to Taylor Creek. 90/ The Kougarok Mining Company initiated another route to the upper Kougarok in 1905. The company lightered considerable supplies for ditching operations to a warehouse on Kaviruk River, known as Davidsons Landing. From there a wagon and sled road extended along Kaviruk River and Henry Creek to strike the Kougarok just below Taylor Creek. In 1916 the ARC assumed responsibility for this route. 91/

One of the Alaska Road Commission's highest priorities was the location of an overland route between Nome and Council via the Solomon Valley. There already was a makeshift wagon road with grades exceeding 20 percent. In 1905 and 1906, though, the ARC marked and constructed a new route with a 10 percent maximum grade from the Council City and Solomon Railroad station at East Fork. When the railroad ceased operation, the Road Commission expended more funds to improve the road segment in the Solomon Valley up to East Fork. 92/

Roads from the coast or a river also penetrated to smaller mining districts. In the first years of the century a wagon road connected the Bluestone placers with Teller. 93/ Wagons followed a road south from Candle to Candle Creek. With greater difficulty wagons could also cross the tundra from Candle to the Bear Creek mines. Supplies striking the coast at Deering could travel by wagon up to mines along the Inmachuk. 94/ When miners began to extract gold near Haycock in the Koyuk drainage, they cleared such a crude road from Dime Landing that the cost of winter sledding was a quarter of that required for summer transport. 95/

There was little road-building outside the Seward Peninsula. Exceptions were those to the mining areas north of the Kobuk River. Miners cleared trails from the river at Shungnak to their claims early in the century; they had the help of a U.S. Commissioner who compelled prisoners to build a trail to the diggings on Dahl Creek. 96/ The operators in the Klery Creek area of the Squirrel River drainage pulled wagons across a swamp. The ARC corduroyed part of this in 1912. However, it fell into disrepair quickly and subsequent miners and the ARC struggled periodically into the 1930s to maintain a useable summer road to the Klery Creek placers. 97/

The gold discoveries which spurred the development of a white society in Alaska's Northwest also were at the root of a radically altered way of life for the region's Natives. Some Yupik and Inupiat found jobs at the mines; a few eventually got their own placers. The increased number of whites brought the Natives into closer contact with

western ideas and products which they adopted with varying degrees of enthusiasm and benefit. In order to help direct and facilitate Natives' accommodation to the gold-rushers' culture, well-meaning whites promoted a proliferation of government schools.

According to A. B. Kinne of the Bureau of Education, Natives had difficulty getting jobs at Council in 1910 because of the "opposition and prejudice of the whites." Nevertheless, there were some exceptions at Council 98/ as well as elsewhere. Even a Native at Shaktoolik engaged in mining in 1918 according to a teacher's report 99/; he probably worked on the Ungalik, the Seward Peninsula, or along the Yukon because the Shaktoolik was not a mining area. Some Koyuk River Natives engaged in seasonal mining. 100/ Many of the Natives at Deering worked at the mines up the Inmachuk. Clarence Andrews, who taught at the village, reported that, "some of the best [hydraulic] nozzle men were Eskimos." 101/ Natives were most closely involved in mining in the Kobuk drainage. Brooks of the USGS observed in 1908 that Eskimos in the valley were "very largely employed, and are said to make very good workmen." 102/ Shungnak Natives were among those who rushed to the Squirrel River placers in 1910. 103/ In that year one Native in the village cleared \$1,400 from his own claim. 104/ Seven years later there were three Shungnak Native-owned mining companies operating much like those of neighboring white firms. 105/

Whites also hired Natives for non-mining jobs. Winter freighting and wood-cutting were common occupations which drew Natives to the white settlements. 106/ Others served as pilots on boats working out of Kotzebue, or provided a variety of services for the Bureau of Education, including cutting lumber and building schoolhouses, as that agency expanded into numerous villages between 1907 and 1910. Villagers learned to make western goods, including boats, which some sold to whites. 107/ White traders hired Natives as clerks at some outposts, while other Natives maintained their own stores. 108/

The Eskimos also partook in the western economy through fur trapping. The market in the first three decades of this century motivated Natives to expend greater effort in gathering furs. Prices rose so that a white fox skin brought \$1 in 1900, \$10 in 1910, and over \$50 in 1929. Natives eagerly sought furs which could yield them annual incomes into the thousands of dollars. 109/ The teacher at Shungnak in 1919 noted that many villagers left the community earlier than usual after breakup so they could kill a maximum number of muskrat which were bringing very good prices. 110/

The government's education and reindeer herding initiatives had a far-reaching impact on Native life. In 1905 Special Agent Frank C. Churchill reported to the Secretary of the Interior on his mission to examine the Bureau of Education's schools and reindeer in Alaska. As a result, the Bureau increased the number of schools in the district, placed reindeer herds near these schools under the supervision of the government teacher, and dramatically accelerated the distribution of the animals among the Native population.

Between 1907 and 1910 the Bureau of Education instituted schools in scores of Alaskan Native villages and took over teaching responsibility from mission schools. When the agency decided on a school site, it often determined the location of a village. Natives, especially those living on the region's rivers, led peripatetic lives. However, Native families quickly congregated around the schools to afford their children an education. Eli M. Myers, who built the log schoolhouse at Shungnak in October 1907, reported that thirty to forty families quickly converged on the area and built cabins. 111/ Similarly, Noatak owed its origins to a Bureau school placed at the site in 1908 112/, as was the

case with Noorvik, where the government put a school in 1915. 113/ The schoolhouses placed on the Buckland and Shaktoolik rivers prompted Natives to build a cluster of cabins around them. These settlements took the name of the respective rivers. Both schools were originally located inappropriately, and the Natives consequently moved the schoolrooms and established new villages of the same names. 114/

In 1907 the government also began the rapid expansion of reindeer herding when it placed herds at Council, Egavik, Golsovia, Marys Igloo, Shaktoolik, Shungnak, and the mouth of the Sinuk River. Within eight years the animals reproduced sufficiently to permit two dozen additional herds in the region. At the same time Native ownership swelled from 6,400 in 1907 to 20,000 in 1911, to 46,700 in 1915. Some owners marketed the meat locally and the Bureau of Education tried, albeit not very successfully, to sell it as well as the hides and antlers to stores in the States. 115/

In its efforts to disseminate ownership of the deer, the Bureau may have been too successful. The teacher at Shungnak observed in 1919 that the villagers each possessed so few reindeer that none had a stake in the herd that would motivate proper care. Sixty years later, in his study of reindeer herding in Alaska, Richard Stern pointed to this situation as a persistent problem with Native-owned herds. Stern noted that the average owner had animals to help his subsistence, but not enough to generate a sustained market operation. 116/

After 1914 non-Natives, most notably the Lomen family of Nome, began herding reindeer. As both white and Native herds grew in the 1920s and 1930s reaching a peak of nearly 800,000 animals, competition for range hurt the industry. Moreover, the Lomens had difficulty selling the product in the Lower 48 and ownership and management problems and a limited local market continued to beset Native operators. Some Natives were able to accumulate enough animals to merit making herding a full-time venture. But the Bureau of Education opposed concentrated ownership and thus supported joint-stock companies in herds beginning in the 1920s. However, these did not prove efficient. Therefore, in the 1940s, after the government bought out the Lomens and other white owners in the late 1930s, the federal government began to encourage individual ownership. This system continues. Today, following encroachment of caribou into the area north of the Seward Peninsula, reindeer herding is limited to the area south of the Selawik River and the number of animals is about twenty-five thousand. The reindeer is primarily valued, not for its meat, but for its antlers, which are sold as aphrodisiac in the Orient. 117/

Missions, paid employment, and government schools altered Natives' lives in a variety of ways. The Eskimos generally adopted Christianity readily. Wages permitted purchase of more white goods. Not only did Eskimos acquire such basic trade items as flour, tobacco, firearms, and ammunition, they also bought stoves, furniture, and sewing machines. By 1919 nearly every family in Shungnak had a sewing machine and one had an organ. With these innovations the Native women adopted the new techniques of bread-baking and sewing. 118/ The schools promoted these skills for girls and taught boys carpentry. Some schools acquired whipsaws or even sawmills with which they built riverboats which gradually replaced the traditional umiat. 119/ The teachers also brought western medicine to the Natives and assisted them to plant gardens of potatoes, cabbages, turnips, lettuce and radishes 120/ and to establish village councils. 121/

For all the changes brought on by the intrusion of white society in the wake of the gold rush, most Natives continued to gain a large measure of their livelihood from traditional sources. Families settled in villages so that children could acquire an education. Some



men herded caribou, sought wage labor, and used western firearms and wooden boats. Women used sewing machines and metal stoves. Still the Natives were only grafting what they desired of western culture onto their own.

Although the modifications in Natives' lives varied from area to area, a couple annual reports from Fred Sickler, the teacher at Shungnak through most of the 1910s, captured much of the variety, flexibility, and sense of compromise with which they accepted changes offered by western society. He reported in 1916 that many Natives had engaged in mining for wages during the Squirrel River rush around 1910. As a consequence these people, who previously had had little except Native food, "became so accustomed to imported foods that these became necessities." Once Kobuk mining slowed, some of the men shifted back to trapping as a primary means of getting cash while others went to the Koyukuk for seasonal work. There were few fur-bearers near Shungnak, so trappers sledged fifty to over one hundred miles to reach good grounds. Some of these chose to keep their children in school and return periodically to visit. But those who stayed out all winter without return visits could harvest twice as many pelts. Consequently, some men took their children out of school and moved their families with them to their traplines. On their traplines game and fish normally were plentiful and they were less susceptible to contagious diseases. Although he was the teacher, Sickler found it impossible to argue with the logic of those trappers who took their families out of the village for the winter: "under the present system industry and education lie in opposite directions."

Sickler also discovered that some inhabitants may have had social reasons for spending little time at Shungnak. Elders explained to him that the river people were not used to living together. Rather, they traditionally tended to scatter; before the school "we never spent more than a year in the same house." The comparatively close and constant contact of Shungnak resulted in gossip and strife, which some chose to avoid by leaving. 122/

Three years later Sickler drafted another particularly insightful report. He described the Natives' activities over the previous year. Only a few herded reindeer. Although a dozen men mined and others headed to Kotzebue to trade and get jobs piloting boats in the summer, most villagers engaged in traditional fishing and hunting. In late September the women picked berries and dug roots while the men went on their fall bear hunt. In October the villagers returned to Shungnak where they prepared for the winter. Trapping was the principal occupation through the winter, while in the spring the Natives hunted muskrat and a few planted gardens.

Sickler also noted a mixture of tradition and innovation in other practices. The Natives came to the teacher often to have cuts and sores dressed and for treatments with cathartics and iodine. But most failed to take medicines requiring regular dosages unless the teacher visited them; then they would take their prescription only so as not to refuse. 123/

In the decades since Sickler penned his reports the Natives of Shungnak and the rest of Alaska's Northwest have continued to pursue the opportunities offered by their traditional ways and the evolving white society which touches their territory. An anthropological study by D. C. Foote and H. A. Williamson summarized the lives of Noatak and Point Hope residents up to the early 1960s. Despite their seeming remoteness from the world economy, both villages suffered a loss of income from the drastic drop in fur prices in the 1930s. But just as in the Lower Forty-eight, the New Deal provided some assistance. The Civilian Conservation Corps and the Works Progress Administration undertook small projects in the area which generated wages. In



the late thirties and early forties old age assistance, welfare, aid to dependent children, and aid to the blind added to the villagers' cash income.

The 1940s saw a return of prosperity. Summer employment opportunities increased, fur prices rose markedly, and the large military presence in the territory generated a much larger market for Eskimo curios and skin clothing. Point Hope's annual income from curios and Eskimo clothing catapulted from thirty-three hundred dollars to eighteen thousand between 1939 and 1943. Fur prices increased; for example, the value of a white fox skin doubled and that of a polar bear tripled between 1948 and 1961. Noatak inhabitants devoted more effort to muskrat hunting in the forties when the price reached \$1.50 per pelt. To do this villagers discontinued their traditional spring move to the coast. Through the fifties few families went to the sea. Rather, short trips by the men between February and April replaced the movement of all villagers. 124/

Wage employment, especially that outside the villages, rose in the 1950s. Even in the depression years of the thirties, Noatak men got longshoring work late in the summers at Kotzebue. In the fifties construction of the Distant Early Warning defense sites provided nearly every able-bodied man in Point Hope with seasonal work at good wages. Noatak men took jobs in the canneries of southern Alaska as well as construction and interior mining employment. In 1960 over 80 percent of physically capable Noatak men pursued wage labor. Roughly equal numbers worked in the canneries; in Fairbanks, primarily in the mines; and in Kotzebue. Most of the latter worked for B&R Tug and Barge 125/, which at times during the summers of the 1960s employed over 250 Natives in northern Alaska. 126/

In 1958 the total incomes of Point Hope and Noatak were \$110,000 and \$69,000, respectively. The sale of Native products accounted for a third of Point Hope's earnings, but only 12 percent of those of Noatak. Summer wages brought in about a quarter of each village's cash. Forty-five percent of Noatak's money and thirty percent of Point Hope's came from government salaries and unemployment benefits, and government benefits accounted for seventeen percent and nine percent on village income, respectively.

In both settlements the increase in post-war earnings spurred modernization of home construction and the purchase of durable goods. By 1959 there were seven frame homes in Noatak. Villagers bought radios, phonographs, and furnishings. Outboard motors were popular acquisitions. In 1940 there were not any in Point Hope and Noatak had only two in 1947. By 1959 the former had forty-five outboard motors and the latter twenty-eight. 127/

For all the increase in cash employment, Foote and Williamson found that the Natives continued to depend primarily on hunting and fishing to survive. Because most jobs were seasonal, not even involving all of the summer, residents could still pursue game and fish. The researchers stated that Noatak residents could not survive without caribou and that the products of the hunt provided "most of the food, fuel, and work clothing" for Point Hope. The bulk of Noatak's diet consisted of caribou and fish. The village's store took in more money for candy and tobacco than for canned goods. Between September 1960 and June 1961, 84 percent of Noatak's fresh meat was caribou; nearly all the rest was fish. Similarly, 80 percent of Point Hope's food came from hunting and fishing and 20 percent from imported food. Thus Foote and Williamson assessed the importance of wage and subsistence labor as follows: "Summer employment is not a desperate attempt to make ends meet; it is an integral part of the activities of the heads of many . . . households. In fact, the majority of families that benefit directly from summer wages

are the most prosperous in the community. On the other hand, hunting is not a substitute for a better way of life that is unattainable. . . . Hunting is considered a very good way of life." 128/

Foote and Williamson observed that after 1910 there was a shift in the role of whites in the Eskimo communities of Northwest Alaska. The white population which depended upon Natives to supply commercial commodities for market was gradually replaced by one dedicated more to servicing Native needs. 129/ The whalers vanished and the mining force shrank. In their stead were teachers, missionaries, and a number of traders and shippers who brought goods to the villages.

Since Foote and Williamson's report, the passage of the Alaska Native Claims Settlement Act has again altered the Eskimos' role in the Northwest. NANA and Bering Straits Native Corporation have emerged as major land owners in the region. They have used their wealth to purchase hotels and construction companies in the Northwest. NANA also holds title to potentially rich mineral deposits.

Minerals and oil are still major attractions of the region. Currently oil exploration is occurring in the Norton Sound. During the sixties and more recently a number of companies have proposed to dredge the seabed near the mouth of Daniels Creek and off Nome. 130/ Gold mining has continued on the historic Nome placers and other outlying mines. However, the greatest interest in expanding Alaska's mineral activity has focused on the copper, lead, and zinc deposits in the Noatak and Kobuk drainages. In the late 1940s Rhinehart Berg noted copper deposits north of the village of Kobuk. The Kennicott Copper Corporation, through its Bear Creek Mining Company, gained options to Berg's discovery and undertook extensive exploration in the 1950s and development work in the early 1960s 131/, before giving up on the operation in the mid sixties due at least in part to falling copper prices. However, exploration continued. In 1965 Bear Creek discovered the Arctic deposits of copper and zinc near the divide between the Kobuk and Noatak rivers north of Shungnak and five years later I. L. Tailleux reported the Red Dog lead-zinc-barite concentration north of the Noatak. 132/ Bear Creek announced in 1981 that it intends to mine nine thousand tons of ore from the Arctic deposit before the end of the decade. However, to date large-scale mining of these deposits, along with the Lik lead-zinc deposit along the Wulik River await adequate transportation. NANA and Cominco American Inc. which have joined forces to develop the Red Dog mine are seeking State assistance in solving the problem of how to get more than one hundred thousand tons of ore a year to market. 133/

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## CHAPTER THREE

### WATER TRANSPORTATION

Travel in Northwest Alaska, whether by river or road, has always been oriented toward the sea. The sea's resource wealth has drawn inland Eskimos and the relative ease of coastal travel, including that to Siberia, has dictated that the Natives' trading centers be at the ocean's edge. Whaling first attracted whites in large numbers to Norton and Kotzebue sounds, but when mining emerged as the region's leading economic activity, whites came to view the sea as the primary supply route from Seattle and San Francisco to western capitalism's remote northern outposts.

The ocean is not an ideal access route to northwestern Alaska. This region is cursed with some of the shallowest seas in the world. Nowhere on the coast can ocean-going vessels dock. Deep-draft ships must anchor fifteen miles away from Kotzebue. Lightering services to town in 1967 accounted for a fourth of all shipping charges from Seattle to Kotzebue. Shippers also employ lighters at Nome, which since its founding has been the primary entrepot for the southern Seward Peninsula. Ships there do not have to anchor as far off shore as at Kotzebue. 1/ However, the Nome coast is completely unsheltered and is frequently battered by storms, which in the gold rush era sent prudent captains to the lee side of Sledge Island, twenty miles west of the city. St. Michael, though today of little importance, once was the major port in the region. It served as the transfer point from ocean-going ships to Yukon River steamboats as early as 1869 and remained the primary route to the upper Yukon drainage until the completion of the White Pass and Yukon Route in 1900 and to the lower Yukon until the Alaska Railroad's riverboat service began in 1923. 2/ St. Michael is somewhat sheltered, but as at Nome and Kotzebue, cargo and passengers have to be lightered to shore.

Supplying Alaska's northwest coast is limited to the open water season. Breakup normally occurs at Nome in late May and at St. Michael in early June. At both places freeze-up takes place in the second week of November. The ice retreats from Kotzebue in late May or early June. However, because the Sound remains clogged with ice, ocean vessels can only reach Kotzebue for about one hundred days from early July to early October. 3/

Besides Kotzebue, Nome, and St. Michael, lighters have brought cargo ashore at numerous secondary access points to Alaska's Northwest. During the gold rush, ocean-going ships anchored off a number of placer gold regions; normally these were at the mouth of a river large enough to furnish small steamboat access inland. Such "ports" included Golovnin Bay for the mines in the Council area, Port Clarence, through which the Kougarok and Bluestone districts could be reached, and Kiwalik, from which small boats proceeded up to Candle. 4/ More commonly, shippers transferred cargo from ocean-going to coastal vessels at Nome or St. Michael. From these points the smaller coastal ships supplied the mining camps of the Seward Peninsula, anchoring not only at Golovin, Teller, and Kiwalik, but also at Dime Landing, Bluff, Solomon, and the Shishmaref Inlet. 5/

The region's rivers and streams disgorge their ice in mid to late May and freeze over five months later. 6/ Many are short or so shallow as to discourage travel. Early prospectors found the open country of much of the Seward Peninsula to be easier to traverse than it was to ascend the rivers. Nevertheless, Natives, prospectors, miners, and, more recently, shippers and recreationists have navigated watercraft of varying descriptions on many of the area's rivers.

Anthropologist Ernest S. Burch, Jr. published a series of papers based on ethnographic and historical research conducted in 1968 in which he concluded that rivers "were the primary avenues of inland transportation in aboriginal northwest Alaska." Most of his data referred to people traveling to reach hunting and trading sites on Kotzebue Sound and the Chukchi and Beaufort seas. Burch wrote that inhabitants along the lower Noatak and Kobuk rivers and short rivers such as the Kivalina sledged to the coast carrying their umiaks in April to hunt seals. But bands living farther up the Noatak, Kobuk, and Selawik traveled in their umiaks and kayaks on the spring flood, arriving at the coast in June. (Russians and some Americans used the Russian terms for umiak and kayak--bidarra and bidarka.) Normally all the residents of the upper Noatak drifted down each summer making for flotillas of several score crafts. Only traders among the Kobuk and Selawik people came to the coast. Average downstream speed was forty-five to fifty miles per day. The return trip, undertaken between mid August and mid September, was far more arduous. Sails occasionally could propel the boats, but normally people poled and tracked upstream. Dogs could do much of the tracking. Travel was also slowed because the umiaks were commonly loaded with several tons of essential cargo. If the water was high it could take Natives four to six weeks to cover the same distance they had made in three or four days of easy downstream travel in the spring. During low water the weaker current and exposed gravel bars made tracking easier. Still, the Eskimos could go only about nine miles in a day. 7/

Although early explorers of the Kobuk River observed numerous Native birchbark canoes, 8/ Burch indicated the primacy of the seal or walrus skin umiak with a driftwood frame. Ocean-going umiaks were thirty to nearly forty feet long. These were taken upriver. Umiaks especially built for river travel were longer and could transport a crew of twelve with four to five and a half tons of cargo while drawing less than two feet of water. A major liability was that the skins had to be dried regularly to preserve them. Consequently, every day or two the Eskimos hauled the cumbersome vessels out of the water. Also, the river-style craft was too flimsy to survive any rough weather on the ocean. 9/

Evidence of aboriginal boat travel exists for rivers on the Seward Peninsula and on the coastline south of the peninsula. Natives may have traveled between Port Clarence and Golovnin Bay via a Kuzitrin-Pilgrim-Niukluk-Fish River route in order to avoid coastal storms. 10/ Caribou hunters annually kayaked up the Koyuk, Inglutalik, and Unalakleet rivers. 11/ In 1866 a Western Union employee wrote that Natives traveled in bidarkas many miles up the Inglutalik to fish. 12/ And certainly Eskimos used some type of watercraft to access their summer fishing settlements, which anthropologist Kathryn Koutsky stated were "located at the confluence of almost every tributary of the Fish and Niukluk rivers" as well as at several points along the Serpentine River. 13/

The whites who swarmed to the region in the late nineteenth century introduced new types of watercraft. In July 1884, Lieutenant J. C. Cantwell's launch entered the Kobuk River, beginning the first steam-powered ascent of a river in northwest Alaska. 14/ During the unwarrantedly enthusiastic rush to the Kobuk in 1898 and 1899, numerous

small steamboats hurried up and down this river. 15/ Steamboats also were used on the Kiwalik, Kuzitrin, Fish, and Niukluk rivers during the early twentieth century in connection with mining. 16/

Whites utilized pole boats and small riverboats. Pole boats were narrow tapered vessels, twenty to thirty feet long. They could carry close to a ton and brought supplies up the smallest and swiftest streams to the sites of prospecting or mining. 17/ Riverboats were broader, shorter, and had a flat bottom and square bow. Prospectors and miners in the early part of the century used pole boats and riverboats on scores of rivers in northwest Alaska.

Moreover, Natives adopted wooden boats. By 1919 a Native of Koyuk and Shaktoolik had attached a gasoline engine to his boat. 18/ In the 1910s Bureau of Indian Affairs officials reported that some Natives in Shungnak built wooden boats, though their traditional birchbark craft continued to predominate. Also, Shungnak residents continued to use large seal- or walrus-skin umiaks until at least 1920 and one or two skin-covered kayaks persisted until 1939. Gradually canvas replaced skins on the kayaks and double-pointed wooded boats came to predominate. There were only three inboard and one outboard motors in Shungnak in 1939, but by the mid 1960s virtually every family had at least one outboard for their wooden boats. 19/

Prospectors' and miners' use of the region's rivers declined after the first part of the gold rush. Interest in exploring many streams evaporated when the first few parties ascending a river failed to find colors. Conversely, if a stream yielded good returns, investors bought up claims and shipped in equipment by trails, roads, or railroads, which frequently provided more efficient transport than small, winding, and normally frozen rivers.

Nevertheless, water transportation has remained important in the past three-quarters of a century, not only for maintaining Native subsistence activities, but also for supplying villages and furnishing recreational opportunities. Natives spread out from the communities of Alaska's northwest to hunt, fish, and trap along many water bodies. As the Native allotment information contained in the Appendix indicates, many of these people reached their subsistence land by boat. During WWI and possibly after, small gasoline-powered schooners regularly ascended the Koyuk River to Dime Landing and lighters reached Council via the Fish and Niukluk rivers. 20/ Small steamboats and lighters took supplies up the Kiwalik to Candle prior to WWII; tugs and barges have moved heavy freight up to the town in the 1970s. 21/ All this century, heavy freight has moved far up the Kobuk to river communities. Deep-draft barges can negotiate the river to Kiana. Shallow-draft barges normally can reach Ambler and occasionally they can make it to Kobuk. 22/ Finally, since WWII, the airplane and the gradual "crowding" of other parts of Alaska has helped promote recreational activities in the northwest, including fishing and float trips by riverboat, kayak, canoe, and inflatable raft. Among the more attractive streams for recreationists are the Noatak, Selawik, Koyuk, Unalakleet, and Kobuk rivers, along with the Kobuk's tributaries, the Ambler, Salmon, and Squirrel rivers. The Bureau of Outdoor Recreation and the National Park Service have examined all of these as potential Wild and Scenic rivers.

As in the first chapter, the water bodies are listed in north-to-south order with tributaries listed after the streams into which they empty. Streams which flow directly into the ocean are in capital letters; tributaries are underlined.

KAY CREEK, NIAK CREEK, ALKALUGEN CREEK, UKINYAK CREEK, ANGOLIK CREEK, SIGRIKPAK CREEK, SINIKTANEYAK CREEK, AKALOLIK CREEK,

NALAKACHAK CREEK, KUNUK CREEK, ANGAYUKAK CREEK, ISUK CREEK, AGARAK CREEK, IKIJAKTUSAK CREEK, NASORAK CREEK, OGOTORUK CREEK, TUMI CREEK, KUROPAC CREEK, KIKTOYA CREEK, KISIMILOK CREEK.

All these water bodies flow to the ocean between Cape Lisburne and Cape Seppings and are within the area exploited by Natives of Point Hope. Those listed through Akalolik Creek are north of the Kukpuk River; the others are to the south.

Anthropologist Ernest S. Burch, Jr. utilized his own interviews with Point Hope residents undertaken in 1969, 1970, and 1980 and the ethnographic work of other researchers from the 1940s through the 1970s to present a general description of the life of Point Hope Natives in the first three-quarters of the nineteenth century. The subsistence region of these people included these creeks and the unnamed creeks which flow into the ocean between them. <sup>23/</sup> However, Burch found no evidence of water travel on them. Indeed, he wrote that "boat travel in the Point Hope Region was restricted to the ocean and lower Kukpuk River, the other rivers being too shallow to float even such shallow-draft craft as umiat." <sup>24/</sup> Similarly, James W. VanStone, another anthropologist, who wrote a book on Point Hope focusing on the mid twentieth century, mentioned summer fishing and boat travel on the Kukpuk but on no other stream. <sup>25/</sup>

The lowest portions or all of these creeks from the unnamed stream emptying into the ocean several miles north of Kapaloak Creek southward through Isuk Creek were included in lands for which BLM issued an interim conveyance to the Natives of Point Hope in January 1977. None were found navigable. The conveyance document, however, did reserve a fifty-foot easement for a proposed trail along the left bank of Akalolik Creek to facilitate travel across Native lands. <sup>26/</sup>

UNNAMED CREEK (mouth in Sec. 16, T. 8 S., R. 60 W., Umiat Meridian), KAPALOAK CREEK, KILIKRALIK CREEK

These water bodies flow into the ocean north of the Kukpuk River. According to anthropologist Ernest S. Burch, Jr., who did ethnographic research at Point Hope in 1969, 1970, and 1980, Point Hope Natives had a fall-winter camp on these streams during some portion of the period 1800-1875. Arthur J. Collier of the USGS noted an abandoned village on Kapaloak Creek in 1904. Burch's study is not clear whether the camps were a mile above the mouths or at the mouths of these streams. Access to the streams from Point Hope certainly was by umiaks. Whether they traveled up the stream is uncertain, though Burch did state that "boat travel in the Point Hope Region was restricted to the ocean and lower Kukpuk River; the other rivers being too shallow to float even such shallow-draft crafts as umiat." The lower half of Kapaloak Creek and all of Kilikralik Creek were in lands for which BLM issued an interim conveyance in 1977. The agency found neither stream to be navigable. <sup>27/</sup>

#### KUKPUK RIVER

Anthropologist Ernest S. Burch, Jr. utilized his own interviews with Point Hope residents undertaken in 1969, 1970, and 1980 and the ethnographic work of other researchers from the 1940s through the 1970s to present a general description of the life of Point Hope Natives in the first three-quarters of the nineteenth century. Umiak travel on the Kukpuk River was important to fall subsistence hunting and fishing. Their umiaks were approximately thirty feet long, six feet wide, and two and one-half to three feet deep. Most Point Hope Natives who wintered along the Kukpuk tried to ascend the river in September although some waited until October to sled up the river. There they would



take advantage of good char and grayling fishing and hunt caribou. Burch did not state how far up the Kukpuk the Natives went in their umiaks. However, he located fifteen fall and winter sites on the river, as indicated by the collective recollections of his informants. Most were below the Ipewik River, two were at the mouth of this important right bank tributary, and three were farther upstream. Two of the sites above the Ipewik were at the mouths of Kokirat Creek and Kakpeyak River. The third was at Alolukrok, which is marked on USGS quadrangle maps in Sec. 34, T. 32 N., R. 29 W., Kateel River Meridian. Normally Natives occupied one house at Kokirat Creek and Kakpeyak River and two dwellings at Alolukrok. But Burch believed these sites were no longer regularly used by the 1880s. Rather the Natives restricted themselves to a handful of camps from Ogsachak Creek downstream. 28/

Continued Native use of the river in the 1920s probably prompted USGS geologists Philip Smith and J. B. Mertie to observe that the Kukpuk "affords an easy route into the interior." Anthropologist James W. VanStone, who studied the Point Hope people extensively in the mid 1950s, described a fall subsistence practice substantially unaltered from that described by Burch. Fishing at the mouth and along the lower reaches of the Kukpuk River was still the primary activity of the season and the residents also hunted caribou from outboard-motor-powered skin boats. VanStone said the Natives ascended the river "a short way." 29/ Burch may give a more precise upper limit to the Natives' autumn ascent of the river. After stating that by the 1880s fall settlements were confined to points at or below Ogsachak Creek, he wrote that in "regular years" sites up to this same point were the only ones which "have been regularly occupied as fall fish camps." Burch changes the verb tense from the previous sentence from past to present, making it plausible that "regular years" is a typesetting error for "recent years." 30/

Besides the Natives' subsistence river travel, there has been at least one scientific boating trip on the Kukpuk. In 1927, an expedition associated with the Field Museum, traveled in the open season on the Kukpuk an unstated distance looking for birds. Although the report of this trip leaves the mode of transport uncertain, the party had a rowboat and kayak on their yacht. 31/

Between 1958 and 1960 Donald C. Foote and H. A. Williamson conducted a study of the people of Point Hope. Among their observations was that from 1940 to 1959 the number of outboard motors in the settlement rose from zero to forty-five. During the summer these motors powered boats up the Kukpuk to Ogsachak Creek to gather food. 32/

The BLM in 1977 addressed the navigability of the Kukpuk and the propriety of easements near it in conveying lands to Tigara Corporation representing Point Hope Natives. The conveyance area included all of the river west of the township line common to T. 33 N., Rs. 29-30 W., Kateel River Meridian. Also in this land were many Kukpuk tributaries, including about the lowest ten miles of the Ipewik. The BLM declared that a portion of the Kukpuk was navigable due to tidal influence, but otherwise it found the river and its tributaries to be nonnavigable when issuing the Interim Conveyance in January 1977. At the same time it accepted two easements along the Kukpuk. It placed an easement originally proposed by the Land Use Planning Commission and BLM's Fairbanks District Office along the left bank of the Kukpuk through the selection area. This followed an existant route of travel and its one-hundred-foot width would permit construction of a two-lane road. The Interim Conveyance also called for a site easement recommended by ADF&G at the confluence of the Ipewik and Kukpuk. The site extended twenty-five feet into the riverbed and was to be used as a boat-landing and camping ground. 33/ In June 1983 the BLM again found the Kukpuk nonnavigable, this time in connection with State-selected land upriver from the village's land through T. 32 N.,

R. 28 W., Kateel River Meridian. 34/ That same month the BLM found the Ipewik to be nonnavigable in State-selected T. 10 S., Rs. 53-54 W. and T. 11 S., R. 56 W., Umiat Meridian. 35/

#### ASIKPAK RIVER

The BLM accumulated information on the Asikpak River in the course of conveying land to the village of Kivalina. At a village meeting at Kivalina on April 28, 1976, residents stated that this water body was too shallow for boats. 36/ Howard L. Smith of BLM's Fairbanks District Office gathered information from Kotzebue guide Nelson Walker, from unspecified residents of Kivalina, and from a survey of Native allotments to prepare a May 27, 1977 report on the stream's navigability. Smith concluded that the area was used primarily for winter hunting, but that the Asikpak was "passable to shallow draft river boats to a limited extent during periods of high water." 37/ Sherman Berg, a realty specialist at BLM's State Office wrote a memo on April 11, 1980 noting that Keith Woodward, a BLM natural resource specialist stationed at Kotzebue, had no information to add to Smith's. 38/ The State informed the Bureau's navigability section in a March 22, 1983 letter that "jet boats can travel 8-10 miles" up the Asikpak. 39/ Nevertheless, on June 24, 1983 the BLM issued its final easement report for the Kivalina conveyance. It determined the Asikpak River to be nonnavigable. 40/

#### IMNAKUK CREEK

Imnakuk Creek is within the Kivalina village conveyance area, but no information on travel along it is in the BLM's files. On June 24, 1983 the agency determined it to be nonnavigable. 41/

#### KIVALINA RIVER

Anthropologists Doris J. Saario and Brina Kessel studied Kivalina inhabitants' subsistence life between 1959 and 1961. They noted that villagers used "large, open skin boats" to seine fish. However, they primarily fished the Wulik River. The researchers wrote that no fishing occurred on the Kivalina "because it is too shallow and has few fish except Arctic grayling." 42/

In 1981, a BLM party attempted to inventory archaeological sites along a projected mining road near an unnamed tributary of the Kivalina. Their base camp was in the northern half of T. 32 N., R. 23 W., Kateel River Meridian. They originally intended to survey fifteen to eighteen miles of the river, but "a sudden drop in water level just before the field crew arrived prevented them from floating the river." 43/

The BLM accumulated information on water travel on the Kivalina River in the course of conveying land to the village of Kivalina. Village residents at an April 28, 1976 meeting stated that they did not want easements through their land along the Kivalina which was one of their prime subsistence areas. They went on to state that they could prove this river was too shallow for boats. 44/

Phil Driver wrote to BLM on May 27, 1976 that he had a Trade and Manufacturing site on the Wulik River which he used in conjunction with his fishing and hunting guiding operations on both the Wulik and Kivalina rivers. He began occasional use of the area in 1969; regular open season use of the lodge began in 1973. He guided twenty-five to thirty people annually from 1973-75 and used a raft and a riverboat. He also stated that most of the charter services at Kotzebue brought fishermen to the Kivalina River. 45/

On May 27, 1977 Howard L. Smith of BLM's Fairbanks District Office drafted a report on the navigability of the Kivalina River relying on information from Driver, two Kotzebue men, and Ken Alt of ADF&G in Fairbanks as well as a survey of Native allotments. There was less subsistence and recreational use of the Kivalina River compared to the Wulik. Smith wrote that subsistence use was most intense at the river's mouth, but noted Native allotments along the stream to T. 30 N., R. 21 W., Kateel River Meridian. He stated that recreation-oriented activity, such as Driver's, largely took place above T. 29 N., R. 24 W., Kateel River Meridian, though as much as a quarter of all recreational use was farther downstream. Shallow-draft boats twenty to twenty-five feet long were the common craft of the area. Smith learned of no obstructions on the river to boat travel. 46/

In January 1978 Smith elaborated on boat use on the Kivalina in his analysis of a proposed streamside easement along the river. He wrote that Driver did about half of his guiding on the Kivalina and that he went downstream as far as Sec. 7, T. 28 N., R. 25 W., Kateel River Meridian. Smith stated that the Kivalina was,

passable to shallow draft river boats to a point about 5 miles above the selection boundary [township line common to T. 29 N., Rs. 24-25 W., Kateel River Meridian]. However, from the vicinity of the northern boundary, where the river becomes braided, passage is difficult even to river boats, according to Mr. Driver. Other than Mr. Driver's guiding operation, no evidence was obtained on commercial use of the Kivalina and it appears that only shallow draft boats have used the stream.

Smith thus recommended that the river be determined nonnavigable and that, because recreation-oriented users flew into the portion of river above the selection area, an easement need not be placed along the river. 47/

Sherman Berg, a BLM realty specialist, wrote a memo on April 11, 1980 addressing the navigability of water bodies in the Kivalina selection area. His report added no information to that supplied by Smith. However, he recommended that the Kivalina be determined navigable because "trade and travel" was or could be conducted on it. 48/ On March 22, 1983 the State navigability staff wrote BLM that boats traveled up the Kivalina "well above Kitingirak Gap." 49/ The BLM determined the river to be navigable through the selection area on June 24, 1983. 50/

The BLM has also made navigability determinations for the upper Kivalina in State-selected lands. On September 10, 1980 the State Director approved a Fairbanks District Office recommendation that the river be declared nonnavigable in T. 32 N., R. 23 W., Kateel River Meridian, well upstream of a braided section in Tps. 29-30 N., R. 24 W., Kateel River Meridian where the District Office stated the gradient obstructed navigation. The BLM again found portions of the Kivalina nonnavigable on June 29, 1983 in a memorandum concerning State-selected lands in T. 30 N., R. 24 W., and Tps. 31-32 N., Rs. 24-25 W., Kateel River Meridian. The BLM's Navigability Section supported this determination in part on information provided by Keith Woodworth, a natural resource specialist in the Fairbanks District Office. Woodworth said that boats had gone up the Kivalina as far as Sec. 26, T. 29 N., R. 25 W., Kateel River Meridian. This statement probably included a typographical error as the Kivalina only traverses Section 36 in this township. In any case, Woodworth indicated that the river was very shallow and had a steep gradient preventing travel farther upriver. 51/

## KAYAKTURIK CREEK

In 1959, 1960, and 1961, Doris J. Saario and Brina Kessel conducted an anthropological study of Kivalina. They later reported that villagers picked berries along Kayakturiak Creek, which apparently is the untitled stream on USGS maps entering Kivalina Lagoon between the Kivalina and Wulik rivers. A small-scale map in Saario and Kessel's article places the berry-picking area one to two miles upstream. The researchers described the creek as "very shallow and difficult to navigate." 52/

## WULIK RIVER

Doris J. Saario and Brina Kessel lived in Kivalina for much of the period between August 1959 and May 1961 to conduct an anthropological investigation. They noted that "everyone in the village owns or has access to a wooden rowboat." The villagers fitted fifty-gallon barrels into these to haul fresh water from the Wulik River. The Natives had kayaks and open skin boats to retrieve sea mammals shot in open water during the winter.

The villagers also used the umiaks for general transportation and to seine fish. No outboard motors were in the settlement until 1950. By the time of the study there were eight in the fourteen- to eighteen-horsepower range propelling the umiaks. The most intensive seining took place on the Wulik. In 1959 low water prevented the establishment of fish camps above a point about at the east end of T. 28 N., R. 24 W., Kateel River Meridian. The following fall the water was higher and fishing was poor in the lower river. Therefore, the Natives set up fish camps up to what the researchers termed "the base of Iyikrok Mountain." This apparently was below the mouth of Tutak Creek according to the markings on a map accompanying the report. Saario and Kessel stated that fishing camps did not exist above the base of the mountain. 53/

The BLM investigated the navigability of the Wulik River in the process of conveying land to the village of Kivalina and to the State. Upon learning of the Natives' selection in the area, interested parties wrote to BLM of the river's recreational potential. On September 18, 1975, Ed Swanson, president of Knik Kanoers and Kayakers, informed BLM that Bob Armstrong of ADF&G had floated an unspecified portion of this prime fishing stream. 54/ Phil Driver wrote on May 27, 1976 that he had a Trade and Manufacturing site on the Wulik which he used in conjunction with his fishing and hunting guide operations on the Wulik and Kivalina rivers. He began occasional use of the area in 1969; regular open season use of the lodge began in 1973. He guided twenty-five to thirty people annually from 1973-75 and used a raft and a riverboat. Driver also stated that most of the charter services at Kotzebue brought fishermen to the Wulik River. 55/

Kivalina villagers met with BLM representatives on April 28, 1976 and voiced their opposition to easements along the Wulik through their land. They stated this river was a prime subsistence area and that they could prove it was too shallow for boats. 56/

Howard L. Smith of BLM's Fairbanks District Office prepared a report on the navigability of the Wulik River within Native-selected land on May 27, 1977 based on information from Driver and two Kotzebue men and from an examination of the location of Native allotments. Smith noted that there were numerous Native allotments concentrated below T. 29 N., R. 22 W., Kateel River Meridian and that Driver and other recreation-oriented use primarily took place above T. 28 N., R. 24 W., Kateel River Meridian. Shallow-draft riverboats twenty to twenty-five feet long were the common type of craft. Smith knew

of no obstructions in the river, but stated that during dry weather the upper portions became too shallow for riverboats. 57/

In January 1978 Smith completed a report on easements in the Kivalina village selection, including a streamside easement for the Wulik River. This document repeated much of the information put forth in the May 1977 report. Smith added that Kotzebue guide Nelson Walker handled as many as fifteen charter flights a summer for sport fishermen to the Wulik. He found no evidence of boat access from the river's mouth to the Wulik's good recreational fishing areas and "no information could be obtained on commercial use of the stream." 58/

Sherman Berg, a realty specialist with BLM's navigability section, prepared a memo on the navigability of water bodies in the Kivalina selection on April 11, 1980 in which he reiterated much of Smith's information. Berg added that Keith Woodworth, a BLM natural resource specialist at Kotzebue, corroborated Smith's data on the type of riverboats on the Wulik. Berg also recommended that the river be found navigable through the selection area because it was used or could be used for "trade and travel." 59/ The BLM adopted this recommendation in a final easement decision issued June 24, 1983. 60/

In September 1980 the BLM considered the navigability of the Wulik within State-selected lands. The selection included the entire river from T. 28 N., R. 23 W. through T. 32 N., R. 19 W., Kateel River Meridian. Keith Woodworth of BLM's Fairbanks District Office wrote "shallow draft riverboats" had ascended the river to about a quarter mile northeast of Tutak Creek. "At this point," Woodworth recorded, "the Wulik makes a sharp bend and a drop in the riverbed occurs. The steep shallow-riffles at this point preclude nearly all riverboat travel." He added that, "allotment parcels below this point are accessible by riverboat." Consequently, Woodworth and the Fairbanks District recommended that the river be determined navigable through the selection to the southern boundary of Native allotment F-13783-B in Sec. 27, T. 29 N., R. 22 W., Kateel River Meridian. The State Director concurred with this recommendation on September 10. 61/

#### Ikalukrok Creek

On September 3, 1980, Keith H. Woodworth of BLM's Fairbanks District Office submitted a report addressing the navigability of Ikalukrok Creek up through T. 31 N., R. 19 W., Kateel River Meridian. Woodworth noted that it was a shallow stream with numerous bars and riffles. He did not recommend it be considered navigable and a week later the State Director determined the creek to be nonnavigable. In June 1983, however, Dennis Daigger of the Alaska Department of Natural Resources wrote to BLM to present new information about the Ikalukrok. He stated that Fred Decicco, an Alaska Department of Fish and Game biologist in Fairbanks who had conducted fish surveys on the creek, believed that flat-bottomed skiffs equipped with jet motors could ascend the creek. At the mouth of an unnamed stream in the NE4, Sec. 14, T. 31 N., R. 19 W., Kateel River Meridian the character of the Ikalukrok changed making boat traffic further upstream difficult. According to Daigger, recreationists have been the primary users of the stream. 62/

#### OMIKVIOROK RIVER

The BLM accumulated information on the Omikviorok River in the course of conveying land to the village of Kivalina. At a village meeting at Kivalina on April 28, 1976, residents stated that this water body was too shallow for boats. 63/ Howard L. Smith of BLM's Fairbanks District Office gathered information from Phil Driver, a hunting and

fishing guide with a lodge on the Wulik River, Nelson Walker, a guide at Kotzebue, and from unidentified residents of Kivalina. In a report dated May 27, 1977, Smith wrote that there was little or no recreational activity on this stream and that the existence of only one Native allotment along it suggested that subsistence use also was very limited. Nevertheless, he stated that twenty- to twenty-five-foot-long, shallow-draft riverboats could ply the lowest two to three miles of Omikviorok River, but only in periods of high water. In January 1978, Smith reiterated this information except to state that there were two Native allotments on the river. 64/ Sherman Berg, a realty specialist at BLM's State Office wrote a memo on April 11, 1980 noting that Keith Woodworth, a BLM natural resource specialist stationed at Kotzebue, had no information to add to Smith's. 65/ On June 24, 1983 the BLM issued its final easement report for the Kivalina conveyance in which the Omikviorok was determined to be nonnavigable. 66/

#### **NEW HEART CREEK, UMAGATSIK CREEK, AGAGRAK CREEK**

The lowest one mile of these creeks pass through the Kivalina village selection area. No mention exists of them in the BLM's village file and on June 24, 1983, the agency determined them to be nonnavigable. 67/

#### **KILIKMAK CREEK**

The Arctic Environmental Information and Data Center in 1975 reported the annual subsistence catch on the Kilikmak was over one hundred salmon. 68/

#### **Unnamed Lake (Secs. 25-26, 35-36, T. 23 N., R. 22 W., Kateel River Meridian)**

In mid August 1973 a party of scientists examined this lake. They accessed the lake by floatplane, probably a Cessna 185. They found its maximum depth to be 1.9 meters. 69/

#### **NOATAK RIVER**

John Muir provided the earliest reference to Native water travel on the Noatak River, which he called the Inland River. In mid July 1881 Muir observed the now-abandoned village of Sheshalik on the Hotham Inlet where each year at that time Natives gathered to trade. Muir noted their kayaks and large umiaks and stated that after trading and socializing "they break up their camps and go to their widely scattered homes, some a month's journey or more up the Inland and down the Colville Rivers." Muir added that Colville Natives annually reached Hotham Inlet via the same route or traded with Noatak Natives near the portage at the heads of the two rivers. 70/

Assistant Engineer S. B. McLenegan of the U.S. Revenue Service and Navy Lieutenant George M. Stoney provided more insight into Native travel on the Noatak River. These men explored the river independently in 1885. McLenegan reported seeing a fishing village near Okak Bend (T. 31 N., R. 1 E., Kateel River Meridian) and caches of Native sleds and some abandoned umiaks above the bend. The last cache he saw was at a large tributary from the east-southeast, probably the Cutler River. McLenegan theorized that the Natives abandoned upriver travel at these points because of the difficulty of boating. 71/

Stoney credited Natives with the ability of boating farther up the Noatak than did McLenegan. (He also described Native boats and their method of piloting them. However, his information about this was derived primarily from his experience on the Kobuk. Consequently, his observations are discussed in the Kobuk River section.)

Stoney's information came from his own and his subordinate, Ensign W. L. Howard's, winter travels and discussions with Natives on the Noatak. Stoney reported that:

Aneyuk [a map in Stoney's report suggests this was at the mouth of the Aniuk River] is the highest point on the Notoark [sic] river reached by the natives in boats. In the fall they come here and wait for the snow to sled into the interior. The skins of the boats are cached until the next season and their frames are placed on high racks to prevent animals eating the lashing. In the spring the people come down by sleds to Aneyuk, put together their boats, and go by water to the coast. This custom is general, only a few families remain in the mountains. 72/

Recent ethnographic works elaborate only modestly on these reports. Anthropologist Ernest S. Burch, Jr. has most directly addressed the travel patterns of Northwest Natives. He relied heavily on interviews he conducted in 1968 and on written histories. According to Burch, Natives on the lower Noatak sledged from their winter camps to the coast carrying their umiaks. Presumably, they boated up the river in the fall. Natives farther upstream followed the travel pattern described by McLenegan and Stoney. Speaking in general terms of a variety of northwest rivers, Burch stated that umiaks were covered with walrus or seal skins, were over forty feet long, and were capable of transporting a crew of twelve and over four tons of cargo while drawing less than two feet of water. Going downstream they could proceed at about fifty miles per day; the return trip rate was about nine miles per day. 73/

McLenegan and Stoney left records of their journeys on the river. McLenegan and a seaman named Nelson began to ascend the Noatak on July 2, 1885 in a twenty-seven-foot-long, three-hole kayak they had acquired in Unalaska. They were unable to persuade any Native to accompany them. Indeed, the Natives they encountered in Hotham Inlet described the Noatak as "very swift, shallow, and difficult to navigate, and that it would be impossible to do so in the bidarka." On Independence Day McLenegan and Nelson passed through the Igichuk Hills where the current became so strong that they had to abandon paddling and begin to pull the boat up with rope. This lining operation was made more difficult because the river was very high, creating many channels. McLenegan wrote that, "most of the channels were small and insignificant, many of them not having sufficient water to float the bidarka." He added that when the water level dropped, the river ran in a more confined bed. Heavy rains around July 6 and 7 raised the river still farther and made pulling against the current more difficult. They continued to line and paddle until by the 15th they entered the Noatak Canyon. Here the river was in a single channel making lining much easier. Until the 20th or 21st they paddled and sailed their kayak. Then for a five-mile stretch in the vicinity of Nimiuktuk River the Noatak was braided and difficult to ascend. On July 22 the men cached much of their supplies because their kayak had weakened. The next day they were again able to sail and paddle upstream. On the 24th the river widened and became shallower and more difficult to ascend. That day they reached a deserted fishing village, probably that at the Okak Bend, where there were "many dangerous rapids." The men remained in camp through a rain storm on the 25th. The next day they entered a low country with many channels and lakes. They tracked, occasionally dragged their kayak, and portaged once. On the 28th McLenegan and Nelson passed the Cutler River. They stayed in camp the following day. 74/

The 30th was their last day going upriver. McLenegan wrote that, "the Noatak was now a mere chain of rapids following in quick succession." Two left bank tributaries entered near to one another. There was an especially dangerous rapid near the mouth of one of these. McLenegan's uppermost point of travel is uncertain. A map which accompanied



his report shows depth measurements for about ten miles above the Aniuk River, although these measurements may have been obtained on a hike rather than by a boat trip. He estimated he had gone five hundred miles on the Noatak. He observed that "further progress was almost impossible." McLenegan added that, "the condition of the river was now such that it was not prudent to proceed further with the bidarka, for should any accident occur we should have no means of returning to the coast"; they were two hundred miles above the nearest timber. McLenegan climbed a nearby hill. From this viewpoint he decided "that we had passed the head of boat navigation and a point considerably above that traveled by the natives. The river was now very narrow, and in most places the water did not exceed a foot in depth." 75/ The two men remained in camp on the last day of July. On August 1 they hiked upstream and near the end of the day they climbed a hill. McLenegan wrote that the Noatak had now "degenerated into a mere rambling creek, the waters of which would not float even our light canoe." Numerous lakes made it impossible to trace the river to one source. 76/

McLenegan and Nelson began boating downstream on August 3. The water was very high and dangerous. However, concern for the safety of their cache 125 miles below from the rising water impelled them to hurry. They noted that Native caches were in danger of flooding, indicating the unprecedented nature of the high water. The river rose eight feet that first day. By the 5th they reached the Noatak Canyon. On their passage through the flats above the Igichik Hills the current was ten to twelve miles per hour. Here they passed Natives struggling to get their kayaks upriver. On August 10 they ended their Noatak journey on the Hotham Inlet. 77/

McLenegan rendered the following summary impression of the Noatak: "The Noatak is not navigable for other than native canoes; the many rapids, combined with the shallow water and rapid current, renders navigation with larger boats quite out of the question." 78/ He also drafted a map giving depth measurements. In the delta the river was two to two and one-half fathoms deep. It was as much as seven fathoms deep in the Lower Noatak Canyon through the Igichuk Hills. The river dropped gradually from twelve feet to three to five feet deep between the Lower and Grand canyons. In the Grand Canyon it became deeper again--up to twelve feet. The Noatak was five to six feet deep upstream to a point about midway between the mouth of the Nimiuktuk River and Okak Bend. From this point to the bend the water occasionally was only three feet deep. At the bend there was as much as twelve feet of water. Farther upriver the depth was three to four feet in most places. McLenegan's last measurement which appears to have been taken above the Aniuk River but below Atongarak Creek was two feet. 79/

Stoney provided much less information concerning the Noatak. He had been in the upper valley in December 1885, having crossed from his base at Fort Cosmos on the Kobuk River. In the following summer, his subordinate, Ensign M. L. Reed, explored the lower portion of the river. Stoney's published report leaves much about Reed's trip uncertain. Stoney had two steam-powered vessels--"a large stern-wheel steamboat" called the Explorer and a steam cutter called the Helena. On July 12 one of these towed Reed and his party sixty miles up the Noatak where they were left to carry on explorations. What watercraft he used, how many men were in his party, and how far Reed traveled upriver are uncertain. Stoney had explored the upper valley down to a right bank tributary above the Aniuk, and Reed's mission was to complete the survey of the river. The finished report contains a map of the entire Noatak; however, it is questionable whether he could have made the entire trip upriver since his party was back at Hotham Inlet on July 22. 80/



Stoney recorded the following conclusions concerning the Noatak's usefulness for travel:

The river is full of sand bars and islands making navigation difficult; it is generally narrow, until about sixty-five miles above its mouth, when it opens out to greater width for twenty miles up and becomes dotted with innumerable sand bars and islands. . . . The channel is narrow and crooked, and the current rapid, to within fifty miles of the mouth, and when the river is swollen from the rains it is impossible to stem it; when the water is low it can be ascended since the foothold can be had for tracking. Although this river is like the Putnam [Kobuk] the current is much stronger, but both rivers are so affected by the height of the water that no approximate strength of current could be determined. 81/

Two sources refer to turn-of-the-century white boat use or potential use on the Noatak. Samuel C. Dunham in an 1898 Labor Department bulletin noted that steam launches could navigate the river for 450 miles. 82/ And the published diary of Martha E. Hadley, a Quaker missionary, made several references to ascending the Noatak an unstated distance from Hotham Inlet in 1899 and 1901 with a launch and barge to gather wood. 83/

A number of U.S. Geological Survey reports issued after the turn of the century made mention of the Noatak River. Walter C. Mendenhall, who led a USGS party through the Kobuk drainage in 1901, wrote that there was an easy winter portage from that drainage via the Reed River to the headwaters of the Noatak. He added that the Noatak "is reported . . . to be navigable by small boats where first seen [from this portage], although natives report that falls exist below." 84/ In 1906 Alfred H. Brooks in a summary of knowledge of Alaskan geography, noted that there had been little exploration of the Noatak and stated that, "the current of the stream is reported to be swift, and in the basins the river is split up into many shallow channels, so it is very doubtful whether steamboat navigation could be feasible." 85/

Philip S. Smith led the first USGS excursion on the Noatak in 1911. The six-man group reached the Noatak from the Alatna River after portaging via Portage Creek, a tributary entering the Noatak at river mile 409. The men used three canoes on their exploration. The weather was ideal; "numerous slight showers kept the streams at a good stage, but did not make traveling disagreeable." 86/

The party's first camp on the Noatak was pitched on July 28 at the mouth of Portage Creek. Smith wrote that the Noatak was navigable by canoe with "few dangerous places" up to this point but that in this "upper part . . . the stream has washed out of the gravel deposits through which it flows many large boulders that make riffles which require careful watch." 87/ He also noted that above the Nimiuktuk River the current averaged only two to three miles per hour. 88/ He observed old boat frames and coverings at the abandoned village at Okak Bend. Farther downstream between the Nimiuktuk and Kuguruk rivers, Smith stated that the water became deeper and was subject to rapid rain-induced rises. 89/

Most of Smith's published comments on the Noatak refer to the area below the Noatak Canyon. Of the long braided area near the village of Noatak, Smith stated that:

the stream splits up into so many channels that the depth of water in any one is not always sufficient to float a boat and therefore the course must be selected with care. Except at the very mouth of the river the current is so strong that little or no progress can be made upstream by rowing or sailing. Good tracking can usually be

found, though the numerous meanders, with cut banks, make frequent crossing from side to side necessary. 90/

In a separate report he described the same area as follows:

The main river occupies a strip of the valley floor about 2 miles wide, within which it is a network of anastomosing or braided streams, most of them shallow and difficult to follow. Although the gradient of the river is low, the volume of water is so great that the current is strong and progress upstream can be made only by tracking. 91/

The river narrows and deepens as it begins its course, first along the northern flank of, and then through, the Igichuk Hills. Finally, the river again spreads out at its delta. Here Smith wrote that the "main river is about a mile wide and has a gentle current. It is not much obstructed by islands or sand bars. At its mouth it is so shallow that boats must follow the channel." 92/ Smith's only mention of seeing other watercraft on the Noatak referred to nearly twenty Native vessels loaded with families heading upstream to the village of Noatak. 93/

In 1908 the federal Bureau of Education established a school on the Noatak at what soon became the village of Noatak. Bureau records contain papers concerning the operation of the school to at least 1916 which are replete with references to travel on the river up to the village. The Kotzebue Sound Lighterage Company brought building supplies for the school, including lumber, shingles, and doors, as well as chairs, benches, and books to the site in 1908. Unfortunately, the correspondence does not reveal the type of watercraft the company used. 94/

Most of the teachers' reports to their superiors contained descriptions of their ascent of the Noatak. Elmer M. Harden started from Kotzebue in a skin boat loaded with supplies on September 16, 1909. Twenty-five miles out of Kotzebue he had to resort to tracking the boat and not far from that point he had to cache half the supplies an estimated fifty miles below the settlement. On the last two days of his five-day journey he encountered drift ice which he feared would rip his boat. Harden recommended that the government contract directly with the Natives to deliver freight at Noatak. He argued that they were well equipped for the task in that they knew the river and had dogs for towing. He stated that some Natives earned money hauling goods. Harden added that there were many riffles and that "no steam boat [sic] or launch in this part of the country . . . will go up this river except in the time of a flood." 95/ However, in mid August 1910, a launch took Harden to Noatak in three days and two nights. The launch took supplies up to within five miles of the village where it had to cache half of it before proceeding to Noatak. The launch on a second trip brought up all the cached supplies except one thousand pounds moved by a skin boat. 96/

Noatak's teachers approvingly reported Natives adopting white culture. Harden noted that they built their first wooden boat on the river in 1911 and that a second was under construction in 1912. He remarked that the Natives had been hindered from building such boats earlier because they lacked a good whipsaw until the Bureau sent one in in 1911. Harden's replacement, Frank B. Snowden wrote that a villager built two large riverboats, the biggest forty feet long and six feet wide, in the spring of 1913. Both teachers believed that Natives saw the superiority of the wood to the skin boat and anticipated the complete substitution of the former for the latter. 97/

Noatak's teachers also urged their superiors to provide them with better transportation. Snowden's list of recommendations in 1913 began with a request for a powerboat. He

stated that there was no regular run on the river and the few boat owners in Kotzebue charged "enormous" fees to charter one. He argued that a boat could pay for itself in one or two summers. His successor, Clarence Ausley, made much the same argument two years later, adding that shippers knew the teachers had to pay any price to get to their post and that it was sometimes difficult even to find a boat at Kotzebue capable of safely transporting several tons of supplies. 98/

The teachers did not get immediate relief. Ausley hired a "small gasoline launch" in the fall of both 1914 and 1915. Launch travel ceased two days into these journeys because of low water; Ausley and his cargo went in skin boats the rest of the way to Noatak. In 1916 he returned to the coast to bring up his wife and personal supplies in a skin boat. He found the slow pace at which the Natives he accompanied upriver traveled to be exasperatingly slow. At least partly because of this he requested the Bureau furnish him with a small rowboat with a two-horsepower motor so he might travel up and down the river on his own schedule. 99/

Government agencies sporadically provided more information on the Noatak. In 1926 the U.S. Coast and Geodetic Survey described the Noatak: it "has numerous rapids, and is not navigable for any distance for boats larger than native canoes." The Coast and Geodetic Survey did not indicate the source of its information. Its 1938 and 1954 reports repeated this description verbatim. 100/ In February, 1945, Everitt M. Calhoun filed a Post War Planning Survey form for the village of Noatak with the Alaska Indian Service. He stated that riverboats supplied the town, but that "Freighting is very difficult by river because of low water in fall of the year." Shallows were particularly troublesome in the five to eight miles just below the village. 101/

A June 1953 draft Corps of Engineers report noted the traffic on the river. The report stated:

Barges can be taken upriver to a point about 18 miles below Noatak village without much difficulty. From this point on, freight is usually carried by small boats unless rains cause high water for several days. Approximately 200 tons are annually freighted to Noatak village; no settlements of any consequence are found upriver from the village. The navigation season usually extends from mid-May to October.

It is not certain how the Corps obtained this information. However, the Corps did conduct an overflight of the river from about sixteen miles above Noatak village to the mouth. At the time of this reconnaissance the river was low and many sandbars were evident upriver from a point about eighteen miles below the village. A 1956 study of the Noatak and Kobuk drainages also noted the use of shallow draft barges and tugs to take supplies to the village of Noatak. 102/ A 1965 the Corps reported that the B & R company barged supplies to Noatak from Kotzebue at a cost of \$39 per ton or forty cubic feet. 103/

Most likely, the Corps got most of its information from the owners and managers of B&R Tug and Barge Company. This firm supplied Noatak and all the rest of the communities from Barrow to Shishmaref beginning in the early 1950s. By 1954 it was the exclusive supplier along the region's rivers. B&R began operation in 1951 with three wooden tugs, the Little Tula, the Herald J, and the Tula, which were 36-feet, 40-feet, and 70.6-feet long, respectively. They also had three barges; two were 60-feet long and the other was 80-feet long. By 1964 the company had added four more barges between 85 and 115 feet in length and had replaced all of its original motive power. It then operated two wooden tugs about 50 feet long and five steel tugs between 46 and 59 feet long. 104/

Except at high water, these boats were unable to travel the entire distance to Noatak. According to Ray Heinrichs, who was B&R's operations manager through the 1960s, even the smallest of these vessels normally was only able to ascend to six or eight miles below the village. From there B&R's Maybelle and open Native-owned skiffs transported supplies upriver. Heinrichs described the Maybelle as thirty feet long with a ten-foot beam. It had an inboard Chrysler engine and a cab over nearly the entire craft and it drew about two and one-half feet of water. At high water it could haul three tons, but at lower water its capacity dropped by half. The skiffs were sixteen to thirty feet long. During high water the thirty-foot boats could haul eight full oil drums; the sixteen-foot boats could take two to four drums. Heinrichs estimated that a full drum weighed three hundred to four hundred pounds. 105/

In the mid 1960s, B&R's management compiled a photograph album of its equipment. The caption for a picture under the Streak described it as four pontoon steel boats welded together. It stated that "bulk" fuel reached most villages, but that the Noatak River "presents problems even for shallow draft vessel [sic] which will never allow bulk deliveries." Consequently, B&R's barges lightered supplies to the shore near the mouth of the Noatak where the Streak picked them up and took them upriver. In this way B&R transported seven hundred drums of petroleum and over five hundred tons of building supplies to Noatak in 1962. 106/

Two or three years later B&R experimented with the Streak. A mechanic with Kennicott Copper, who was in the area in connection with the company's mining prospects on the upper Kobuk, told Heinrichs of airboats used in South America. Heinrichs decided to attempt a similar innovation. B&R placed an airplane motor on the sixty-foot-long Streak and thus powered the boat to and from Noatak. However, the experiment failed because of the excessive amount of fuel the engine required to propel the craft. 107/

Between 1958 and 1960 Donald C. Foote and H. A. Williamson conducted an anthropological study of Noatak. They noted that the villagers' growing purchasing power permitted them to buy outboard motors; the number in the settlement rose from two in 1947 to twenty-eight in 1959. They also observed the importance of boat travel in caribou hunting. Hunters could only kill caribou within five miles of the river because of the difficulty of packing the meat out on foot. Foote and Williamson noted that in 1960 the hunters ascended the river to "Ningnuktok," a place somewhere above Kelly River. They also stated that in 1960 villagers boated up to Evaingiknuk Creek to seine fish. 108/

In the early 1960s archaeologists began extensive research in the Noatak drainage. No fewer than three parties descended on the river in 1961. At least five other expeditions occurred in the next three summers. Commonly, the researchers did not specify their method of travel through the valley. At least some took a boat or canoe. In 1962 William Irving traveled eight hundred miles in a boat on the Noatak and some of its tributaries. He used the boat at least as far up as the Nimiuktuk River. However, the previous year he and his assistants confined themselves to air and foot travel. Douglas D. Anderson in 1964 went upriver in a boat as far as Okak Bend. 109/

Claire Fejes published People of the Noatak recounting her experiences and the stories told to her by Natives on her visits to Sheshalik and Noatak in the late 1950s and mid 1960s. Sheshalik, near the mouth of the Noatak River, was the summer sealing and whaling center for Noatak villagers. Fejes spoke with a man named Gordon who recalled earlier times before his people acquired outboard motors. Then dog teams pulled the Natives' umiaks up to Noatak. He said they used dogs "to pull the load against the swift river current." Fejes described traffic in the 1960s: "The Noatak was little traveled

except by Eskimos and an occasional barge loaded with supplies. Most white people flew to Noatak. The river, . . . was said to be hazardous." 110/

Fejes boated up to the village on one of her visits in the 1960s. Three boats traveled upriver together. Two young men were in one, a man named Jack with numerous dogs took the second, and Jack's son-in-law, a woman named Okukchuk, and Fejes were in a third. Fejes' was a "long wooden boat" equipped with a twenty-eight-horsepower engine. It carried four drums of gas and a year's supply of flour and sugar in fifty-pound sacks. The weight totaled more than two tons. The other boats had all sorts of supplies and were powered by eighteen-horsepower motors. 111/

Although the river's mouth was "a choked angry mass of churning water," they eventually reached the calmer waters of the river itself. Recent rains had raised the river and given its current increased power. The river narrowed at its lower canyon and Fejes "had trouble passing." The men drove the boats through the night although they waited for light to pass through "a swift whirlpool current." Fejes praised her helmsman for "guiding our boat past the shallow water and the deadfalls of trees that threatened us, unerringly coming through the dark river." They arrived at Noatak that morning. After a visit at the village Fejes returned to Kotzebue by riverboat, on the way encountering other Natives motoring up to Noatak. 112/

In the 1960s, Jane Pender coaxed a Native family to take her much farther upstream than Fejes had gone. Pender, a woman friend, and two men left Kotzebue at the end of July in a heavily-loaded, outboard-motor-powered, thirty-foot wooden riverboat. They reached Noatak their first day out. Pender recorded that the river up to the village "is well traveled and fairly well known." They spent their second night near Kelly River. Pender's female companion had expressed concern about rocks and white water in the Upper Noatak Canyon, but high water covered the rocks. Consequently, they had an uneventful trip their third day out, stopping that night at Sapun Creek. 113/

The travelers first experienced difficulty in ascending the river once they got above Okak Bend. A shallow bar required them to track and pole. They eventually were again able to use the motor, but had to revert to tracking and poling five minutes later. Again they were able to use the motor for fifteen minutes, then more tracking and poling, then ten more minutes of motoring until they reached the Aniuk River, which they ascended for several days. Their return trip down to Noatak was accomplished in less than three days and with no reported incidents. 114/

Pender's friends indicated that they had hunted in the Aniuk valley. Edwin S. Hall, an archaeologist, visited the Noatak River in the early 1970s and reported that in the fall Noatak villagers hunted caribou in the middle portion of the river from boats. Hall did not define what he meant by the middle portion of the river. 115/

Dee B. Crouch and his wife floated most of the Noatak in a folding double kayak in 1971; Crouch later wrote that the trip could have been made in a canoe or inflatable raft. In July they flew into Lake Omelaktavik (T. 26 N., R. 15 E., Kateel River Meridian). After portaging, they began to float the river. Near Lake Matcharak they began to run "small rapids," which required caution to avoid rocks. Crouch wrote that "late in the season, the river above this point could be quite low, making travel frustrating as well as hazardous to the bottom of a boat." After a week the couple reached the Cutler River, where overnight a hard rain raised the Noatak four inches. Although warned of rapids in the canyon area above the Kelly River, they found that "there were only two corners where water stacked up near the outside." Crouch stated that in "low water this might

change, as the river reportedly drops off some small ledges. In any event, there are no surprises and portage would be easy." After thirteen days on the river they reached Noatak village, from where a Native took them by riverboat to Kotzebue. 116/

Various government parties also studied the Noatak in the 1970s. Thomas D. Hamilton and seven others in a Bureau of Outdoor Recreation group canoed the river in 1972. A floatplane transported the men and their gear to an unnamed lake three miles east of Lake Omelaktavik. On the last day of July they began traveling downstream. They averaged over twenty miles a day, arriving at the village of Noatak on August 15. 117/

From Anorat Creek down to Ilnelivik River, Hamilton found the water was deep enough for canoes or small rafts. About half of this stretch of river was a single channel. Braided portions were most pronounced below the confluences of major tributaries. There were bars of sand and pebbles as well as cut banks eight to ten feet high. Between Ilnelivik River and Aniuk River he found that the river alternated between a low, gentle gradient and boulder-choked rapids below steep bluffs. Hamilton considered the very steep and boulder-littered area below Douglas Creek to be the most hazardous on the river. The gradient increased down to the Aniuk. In the middle stretch, Hamilton wrote that the flood plain widened to three or four miles. 118/

The National Park Service's records (NPS subsequently absorbed BOR) hold another account of the same voyage. It indicated that the party used four aluminum canoes and that daily travel ranged between twelve and thirty-three miles. One eighteen-foot canoe was bent on rocks in strong rapids on their second day on the river. The report described the river above Lake Matcharak as from four inches to three feet deep, about seventy-five feet wide, with a three-mile-per-hour current. Because of a recent rainstorm, there was just enough water to float the canoes. The report stated that in early summer this part of the river carried enough water to float canoes, but by late July rains were necessary to have the river get enough water. 119/

The report goes on to describe the portion of the river below Lake Matcharak. Down to the Noatak's Grand Canyon it averaged two feet deep with a current of three miles per hour and a width varying from seventy-five to 250 feet. In this stretch the party encountered rapids with three-foot standing waves and spent one and one-half days lining canoes in shallow water and through extensive rock areas. In the Grand Canyon and Noatak Canyon depths continued to average two feet, but occasionally reached four and even eight feet. The flow rate increased to four miles per hour and the width varied between seventy-five and two hundred feet. Rapids were twice as frequent and twice as large as those in the preceding segment of the river, though a good route through them was generally easy to locate. 120/

Finally, the lowest part of the river was broad and braided; its depth varied between three inches and fifteen feet, the channels ranged from fifty to five hundred feet wide, and the current quickened to five or six miles per hour. Sweepers and large masses of floating sod made this portion of the Noatak hazardous. According to the report riverboats and V-hull powerboats could ascend the Noatak to the Kelly River. It also concluded that intermediate canoeists could maneuver through 90 percent of the river and that a short portage was necessary only in the uppermost part of the stream. 121/

In 1973 the U.S. Bureau of Outdoor Recreation (BOR) issued a preliminary report on the Noatak's potential as a Wild and Scenic River based on the previous year's fieldwork. The BOR recommended that the Noatak be classified as a Wild River above Kelly River and a Scenic River below Kelly River. Like on the Kobuk, there was "extensive" use of riverboats on the Noatak. The preliminary report repeated much of the earlier report's

description of the river. It differed in stating that the average depth between Lake Matcharak and the Grand Canyon was three instead of two feet and that standing waves were as much as two rather than three feet high. Also it added that standing waves in the canyon reached three feet, that the normal depth through the canyon was three to four feet and pools reached ten feet. Below the village of Noatak it indicated that the current quickened from six to ten miles per hour, but later slowed to under two miles per hour. The 1973 report stated that Natives had taken riverboats up as far as Okak Bend. Recreational use of the river was minimal although it was canoeable; most of the river would be rated II on the international white water scale. 122/

In 1974 the Department of the Interior published the following description of recreational boating on the Noatak in connection with the department's study of the area:

An occasional party of two-to-eight [sic] canoeists or kayakers travel down the Noatak River in summer. Such parties are most frequently flown to lakes in the Noatak's upper valley from Bettles where canoes can now be rented. It is only a short portage to the river and about a 335 mile trip to Kotzebue Sound. Trips may be ended at Noatak Village where air service is available to Kotzebue or continued to the Noatak Delta across Hotham Inlet. 123/

Some non-government travelers also have recorded their experiences on the Noatak. That same year Andy Williams reported on a canoe trip he, his uncle Ogden Williams, and Al Adams and Robin Pell took down the Noatak. A floatplane landed the men, two aluminum canoes, and six hundred pounds of supplies at a lake Williams described only as "just west of the Arrigete Peaks" (see Survey Pass Quadrangle). Williams and Adams were inexperienced canoeers, yet they had little trouble on their fourteen-day excursion to Noatak. At the beginning of the trip the river was only forty feet wide. The most exciting part of the voyage was a long series of rapids somewhere above the Cutler River, which the party spent most of their third day descending. Williams described one stretch as "a 500-yard washboard with a two-foot ledge that nearly buried the nose of the canoe in the water." His uncle and Pell got hung up on a rock here and were swamped when they tried to dislodge the canoe. On the second day after passing the Cutler River rains came and overnight the Noatak rose six feet. The flood accelerated their floating; one day they went nearly forty miles, which was twice their average. Williams summarized the Noatak as "easy for canoeers, although rocks and shoals made the use of strong aluminum canoes advisable. There were few rapids, but the river was more characterized by strong headwinds that made paddling difficult." 124/

In 1975 the National Technical Information Service published a mineral study of the upper Noatak valley in the vicinity of Douglas and Midas creeks. It noted that, "access is best gained by helicopter, however, small boats can travel up the Noatak River from Noatak to within 2 or 3 miles of the examination area." The report also stated that floatplanes could land on several lakes in the area and that some gravel bars provided access for wheeled planes. 125/

In April and August, 1978, Joseph M. Childers and Donald R. Kernodle conducted a hydrological investigation of the Noatak River. They stated that they did their research in August with a riverboat, but did not state explicitly what portions of the river they boated in. However, the two men did conclude that:

The Noatak River provides conditions favorable for recreational boating from the Ilnelivik River to the mouth. The flow through the three canyons is smooth. One 7-mi [sic] reach of boulder-strewn rapids upstream from Atongarak Creek is called Etimnikroak, or swift water, by the Eskimos. This was the only segment of the



Noatak observed during August 1978 that might cause a navigational problem for boaters. Below the Eli River the Noatak was wide, deep, and smooth flowing. 126/

The Bureau of Land Management determined the Noatak navigable in 1982 in both the Kotzebue and Noatak village selections. The agency based these determinations on the transport of goods to the latter village, intercommunity travel between the two settlements, and the river's "significant role in providing access to public lands" north of Noatak's selection. The Kotzebue selection included the lowest portions of the river; Noatak's extended through T. 27 N., R. 18 W., Kateel River Meridian. 127/

#### Unnamed Lake (Sec. 11, T. 26 N., R. 15 E., Kateel River Meridian)

Floatplanes can land on this lake. This may be the lake on which a Bureau of Outdoor Recreation eight-man team landed in 1972 with canoes and supplies for a float down the Noatak River. One of the expedition's members indicated that they landed a floatplane on an unnamed lake three miles east of Lake Omelaktavik. This certainly was the lake on which a group of scientists had a camp in early and late July 1973. They flew in and out of their camp by floatplane, probably using a Cessna 185. The men measured the lake's depth finding no point at which it was more than two and one-half meters deep. 128/

#### Lake Omelaktavik

Lake Omelaktavik (T. 26 N., R. 15 E., Kateel River Meridian) is used for floatplane access to the upper Noatak valley. Dee B. Crouch and his wife landed on the lake in July 1971 to begin a float trip downriver. 129/ Two years later in July a party of scientists landed a floatplane, probably a Cessna 185, on the lake. Rains had been extremely heavy in recent days. They took soundings finding the lake's greatest depth to be three meters. 130/

#### Lake Matcharak

In July 1973, following very heavy rains in the area, scientists landed on Lake Matcharak (T. 27 N., R. 12 E., Kateel River Meridian). They noticed a fishing cabin on the lake and measured the water body to be "at least" ten meters deep. 131/

#### Aniuk River

Travel in the Aniuk valley to Howard Pass was a traditional overland route to the Colville according to anthropologists. Ernest S. Burch, Jr., who conducted ethnographic studies in Northwest Alaska in 1968, wrote that, "because of the gentle slope and the few local topographic impediments to sled travel, the Eskimos used to portage large boats . . . between river systems via Howard Pass in the spring." Burch did not make it clear if or to what extent this travel involved boating on the Aniuk. 132/

The first documented watercraft travel on the Aniuk River occurred in late July and early August 1925. That year a U.S. Geological Survey party headed by Philip S. Smith studied the National Petroleum Reserve. After canoeing up the Etivluk River, a Colville tributary, they portaged to an unspecified tributary of the Aniuk. Surveying as they went, Smith recounted that the "Aniuk was followed down without much difficulty to its mouth, which was reached August 11." 133/

The only extensive first-hand account of travel on the Aniuk stems from a summer sight-seeing trip Jane Pender took in the 1960s with two men and a woman of a Native family. They rode a heavily-laden, outboard-powered, thirty-foot, wooden riverboat up



the Noatak to the Aniuk River. On their fourth day out of Kotzebue they reached the Aniuk. It took them about an hour to enter the mouth of the river. They camped for the evening about a mile up the tributary. The next morning they cached some of their supplies, since they intended to ascend the river to Howard Pass. That first full day on the Aniuk they had to pull the boat through three rapids. They stopped after three hours. Pender described the rest of their upriver boat trip as follows: "Day by day, we forced our way upriver. We would ride a little, then shove the boat awhile." They did not stop boating until they entered hill country. One of their party scouted the river ahead before they started to walk. On the second day of their hike they reached "the last ridge," but they had not come to the pass. One of the men killed a caribou and Pender's female friend told her they could make a skin boat and float downriver. However, they did not do so. Rather, because of heavy rains and the fear that it might sweep away their boat, they made a long one-day hike back to the boat. The next day they boated down the Aniuk and the Noatak nearly to Okak Bend. 134/

The Department of the Interior in a 1974 study of the Noatak valley's recreational potential noted that persons have taken foldboats an unstated distance down the Aniuk. 135/

#### Kikitaliorak Lake

As part of a biological study of the Noatak drainage, a group of scientists made a camp on the southern shore of Kikitaliorak Lake (Tps. 31-32 N., Rs. 11-12 E., Kateel River Meridian). They made north-south and east-west transects of the lake, finding it "to be fairly shallow for its surface area." The deepest spot was about sixteen feet deep, but much of the lake was only four feet. They flew in and out of the lake by floatplane, probably a Cessna 185. 136/

#### Kipmik Lake

A group of scientists made a base camp on the northwest shore of Kipmik Lake (Tps. 29-30 N., R. 12 E., Kateel River Meridian) July 17-23, 1973. Their report did not explicitly indicate that they accessed this mountain-bounded lake by floatplane. However, the party used a Cessna 185 extensively in their work elsewhere in the drainage, they made no mention of a helicopter, and alternative transport modes would not have allowed them to keep to the schedule reflected in their report. Therefore, it can be assumed they landed on the lake in a floatplane. They measured the lake's depth; much was thirty-three feet deep and the deepest point was nearly one hundred feet. 137/

#### Amitchiak Lake

The same party which camped at Kipmik Lake visited this neighboring water body on July 22-23. They sounded much of the eastern third of Amitchiak Lake, finding ridges which rose to within six feet of the surface and holes up to sixty-five feet deep. 138/

#### Sikik Lake

As part of a biological study of the Noatak drainage, a group of scientists landed a Cessna 185 on Sikik Lake (T. 31 N., R. 3 E., Kateel River Meridian). They reported it was one and one-half meters deep. 139/

#### Cutler River

Two government surveys seven decades apart provide information about Cutler River. Philip S. Smith, who led a 1911 USGS party down the Noatak pass the mouth of the

Cutler River, observed that it carried "nearly one-half the volume carried by the main river above that point." 140/ The Department of the Interior in a 1974 study of the Noatak valley's recreational potential noted that persons had taken foldboats an unstated distance down the Cutler. 141/

#### Unnamed Lake (Secs. 3-4, 9-10, T. 26 N., R. 3 E., Kateel River Meridian)

In early August 1973 a group of scientists had a base camp on the shore of this lake, which they called "Anuk Lake." They accessed the lake by floatplane, probably a Cessna 185. A report issued after their examination stated that the lake rarely was more than one meter deep; the greatest depth was four feet. 142/

#### Feniak Lake

As part of a biological study of the Noatak drainage, a group of scientists landed a Cessna 185 on Feniak Lake (T. 33 N., Rs. 2-3 E., Kateel River Meridian) in early July 1973. They used a camp on the south end of this lake as their base camp. They reported that most of the southern two-thirds of the lake was between sixteen and thirty-nine feet deep and that a hole in the northern part was ninety-one feet deep. 143/

#### Navashak Lake

A group of scientists on a biological examination of the Noatak drainage, landed a Cessna 185 on this lake (Tps. 31-32 N., R. 3 E., Kateel River Meridian) on July 5. They recorded its maximum depth as approximately 12 feet. 144/

#### Desperation Lake

There are two references to Desperation Lake. According to his Dictionary of Alaska Place Names, Donald Orth learned that local Eskimos called the lake "Tupichalik," which means "new tent," referring to a dry gravel beach on its shore "that has been used for camping purposes since man has been in the area." Also as part of a 1973 biological study of the Noatak River drainage, scientists landed a plane, probably a Cessna 185, on Desperation Lake (T. 34 N., Rs. 1 E. and W., Kateel River Meridian) in early July. 145/

#### Kugururok River

In 1964 archaeologists Douglas D. Anderson and Raymond Lee carried out studies along the Noatak using an undescribed boat. They attempted to boat up the Kugururok, but failed "because of shallow water." They instead hiked overland to examine a site on the river. 146/

#### Lake Kaiyak

Early in August 1973 a party of scientists examined Lake Kaiyak (T. 32 N., R. 12 W., Kateel River Meridian). Although the report they issued did not explicitly state that they landed on the lake with a floatplane, such access is nearly certain. The men used a Cessna 185 with pontoons in other parts of their investigations of the Noatak drainage, they did not use a helicopter, and they moved too rapidly through the area to have depended on water or land transport. They took measurements, finding its maximum depth to be about five feet. 147/

### Tulugak Lake

In early August 1973 a number of scientists visited Tulugak Lake (T. 30 N., R. 13 W., Kateel River Meridian). Although the report they issued did not explicitly state that they landed on the lake with a floatplane, such access is nearly certain. The men used a Cessna 185 with pontoons in other parts of their investigations of the Noatak drainage, they did not use a helicopter, and they moved too rapidly through the area to have depended on water or land transport. They took measurements, finding it had a maximum depth of about eighteen feet. 148/

### Lake Narvakrak

A group of scientists surveyed Lake Narvakrak (T. 30 N., Rs. 13-14 W., Kateel River Meridian) in early August 1973. They reached it on foot from a base camp on Tulugak Lake. They took measurements, finding its maximum depth to be only four feet. 149/

### Lake Mapsa

Early in August 1973 scientists examined Lake Mapsa (T. 30 N., R. 14 W., Kateel River Meridian). Although the report they issued did not explicitly state that they landed on the lake with a floatplane, such access is nearly certain. The men used a Cessna 185 with pontoons in other parts of their investigations of the Noatak drainage, they did not use a helicopter, and they moved too rapidly through the area to have depended on water or land transport. They took measurements, finding it to be a shallow thaw pond with a depth of eight feet. 150/

### Kelly River

According to a 1972 report in the National Park Service's records the Kelly is seventy-five feet wide and two to three feet deep at its mouth. 151/

### Lake Tagakvik

In early August 1973 a party of scientists studied Lake Tagakvik (T. 30 N., R. 15 W., Kateel River Meridian). Although the report they issued did not explicitly state that they landed on the lake with a floatplane, such access is nearly certain. The men used a Cessna 185 with pontoons in other parts of their investigations of the Noatak drainage, they did not use a helicopter, and they moved too rapidly through the area to have depended on water or land transport. They took measurements, finding it to have a maximum depth of five feet. 152/

### Unnamed Lake (Secs. 7-8, 17, T. 26 N., R. 17 W., Kateel River Meridian)

As part of a biological study of the Noatak drainage, a group of scientists landed a Cessna 185 on this lake on June 28, 1973. They reported that it had a maximum depth of about six feet. 153/

### Eli River

In 1973 eleven scientists undertook a biological study of the Noatak basin. As part of their investigations the group had a base camp on a slough connecting the Noatak and Eli rivers in T. 24 N., R. 19 W., Kateel River Meridian. The slough and Eli River in this area were described as having "deep pools and long shallow runs." They reached this camp by boat and examined open tundra country northeast of it "easily . . . by traveling some distance up the Eli River by boat." A map accompanying the scientists' report indicated

they examined the Eli to a point midway through Sec. 7, T. 25 N., R. 18 W., Kateel River Meridian. 154/

Natives' selection of townships including much of the Eli River directed BLM's attention to the water body's navigability and the need for easements alongside it. The agency got much of its initial information about the river from residents of Noatak and Kotzebue, including Nelson Walker, a professional guide from the latter town. An undated navigability field report noted that subsistence use concentrated near the confluence of the Eli and Noatak and that shallow-draft river boats could not ascend beyond Sec. 9, T. 26 N., R. 18 W., Kateel River Meridian. Both the Bureau of Mines and the Alaska Division of Lands proposed easements along both banks of the Eli citing Native and some recreational use. The Alaska Department of Fish and Game asked for a campsite and boat and floatplane tie-up in Sec. 6, T. 23 N., R. 19 W., Kateel River Meridian. The agency stated that sport fisherman had camped at a site in this section before and that such a place was necessary to insure continued public use of the river. 155/

The BLM's Arctic-Kobuk Resource Area proposed to determine the Eli nonnavigable; it also believed that easements along its banks were not necessary. It could not document any significant use of the river. It found six Native allotments on the river, all below Sec. 8, T. 24 N., R. 19 W., Kateel River Meridian. The Area Office found no use in crafts larger than riverboats and that this did not go above Sec. 9, T. 26 N., R. 18 W., Kateel River Meridian. This was still well within selected lands making an easement along the river of little use in accessing public lands. In January 1978 the easement staff composed primarily of Fairbanks District Office personnel supported the Area Office's recommendations. The Notice of Proposed Easement Recommendations also reflected the Resource Area's view. The BLM, however, reconsidered the navigability of the Eli in early 1980, noting that between Secs. 7, 18, T. 24 N., R. 19 W. and Sec. 1, T. 23 N., R. 20 W., Kateel River Meridian was essentially a slough of the Noatak and thus navigable like the Noatak. A final easement and navigability memorandum issued on January 17, 1982 supported this finding. 156/

#### Unnamed Lake (Secs. 17-20, T. 24 N., R. 18 W., Kateel River Meridian) and its outlet

The BLM addressed the navigability of this lake in an undated navigability field report in conjunction with conveying land to Noatak Natives. The agency's Arctic-Kobuk Resource Area contacted residents of Noatak and Kotzebue, including professional guide Nelson Walker, without confirming any but sporadic floatplane use. Its report stated that only "extremely small craft, such as canoes or kayaks" could pass through the lake's outlet. The Bureau of Mines requested an easement along the lake's shore citing Native and some recreational use. The Resource Area concluded that sporadic floatplane landings on the lake did not justify finding it navigable nor approving a shoreline easement. In 1978 and 1979 the Fairbanks District Office and the Alaska State Office agreed with this assessment. However, the BLM carried on no further actions relevant to this water body because it proved to be outside the selection area. 157/

#### Aliktongnak Lake and its outlet

As part of a biological study of the Noatak drainage, a group of scientists landed a Cessna 185 on this lake (T. 23 N., R. 18 W., Kateel River Meridian) on June 27, 1973. They reported that the lake was "relatively deep, having a maximum depth of 4 m." 158/

The BLM gathered information about this lake and its outlet to Sevisok Slough in the course of investigating water bodies and reserving easements on Native-selected lands near Noatak. Residents of Kotzebue and Noatak indicated shallow-draft boats could navigate the outlet, which BLM called Aliktongnak Creek. However, this was not possible during periods of low water. The Bureau of Mines proposed easements around the lake and along both of the creek's banks, citing Native and some recreational use. The Alaska Division of Lands proposed an easement on both banks of the stream. The ADF&G proposed a campsite and boat and floatplane tie-up on the lake in the interest of fly-in fishermen. Subsequently, BLM's Arctic-Kobuk Resource Area prepared a report. It found no evidence of "commercial" use of the creek and only one Native allotment on the lake. The very limited recreational use of the lake (it was reputed for good pike fishing), including that by floatplanes, did not justify an easement on the lake and with no need to reach the lake there also was no justification for an easement on its outlet. In January 1978 when the easement staff met to consider easements for the Noatak selection, it supported the Resource Area's recommendations. However, by the time BLM issued a Notice of Proposed Easement Recommendations in November 1979, the land encompassing the lake was noted to be outside the selection area. 159/

#### Unnamed Creek (mouth in Sec. 5, T. 19 N., R. 18 W., Kateel River Meridian)

In 1973 eleven scientists undertook a biological study of the Noatak basin. As part of their investigations the group had a base camp a few hundred yards up this stream, which the scientists' report incorrectly identified as the "Seetakuyuk River" (probably a misspelling of Situkuyok River), which enters Kotzebue Sound via Tukrok River about twenty miles to the west of this unnamed stream. At the camp the stream was twenty meters wide and two meters deep. The Noatak's tributaries and distributaries in this area were generally described as "broad, shallow, and slow moving." A map accompanying the report indicated that the scientists examined this stream by boat or foot through Sec. 4, T. 19 N., R. 19 W., Kateel River Meridian. 160/

In the course of conveying lands through ANCSA to NANA Regional Corporation and the village of Kotzebue, the BLM made no mention of this stream. On June 25, the agency issued its final easement memorandum including this water body in T. 19 N., R. 18 W., Kateel River Meridian among those determined nonnavigable. The BLM subsequently granted interim conveyance for the land to the Native corporations. 161/

#### Shiliak Creek

Shiliak Creek is a tributary of the Little Noatak, which is a distributary of the Noatak River. In mid July 1961 archaeologist Douglas D. Anderson, guided by Carl Nelson, located an obsidian site on the creek. Anderson stated that summer access to the site was easiest by boating as far upstream as the water level permitted and then walking. In 1961 Anderson was able to boat about two miles up the Shiliak. From there he hiked in five to seven miles. 162/

The BLM has twice addressed the navigability of Shiliak Creek. In June 1982 the agency included it among those water bodies within Native-selected lands in the Kotzebue area which were nonnavigable. This determination, confirmed in an interim conveyance dated September 2, 1982, encompassed the lowest portion of the stream up through Sec. 8, T. 19 N., R. 16 W., Kateel River Meridian. 163/

In June 1984 Susan Eaton of BLM's Navigability Section wrote a draft navigability report for Secs. 4-6, T. 19 N., R. 16 W., Kateel River Meridian. Shiliak Creek passes through Sec. 4. Eaton noted Anderson's experience, cited access by Native allotment claimants on the creek, and interviewed ADF&G Fish and Wildlife personnel familiar with the

region. Eaton wrote that three Natives had allotments on Shiliak Creek in T. 20 N., R. 16 W., Kateel River Meridian. All of these reached their lands by sled or snowmobile. Three other allottees claimed land touching the stream in Secs. 8 and 17, T. 19 N., R. 16 W., Kateel River Meridian. One was at its mouth, while the farthest up was on the water body's north bank at the stream's northernmost point in the NE4 of Sec. 8. This was approximately one and three-quarters miles upstream. All three owners claimed access was by boat and the BLM's field examiners reached at least the upper two by boat. The claimants of the lowest two parcels began their use in the 1950s; the other began use of his parcel in 1965.

On June 19, 1984, Eaton spoke to Joe Dinnocenzo, the ADF&G area manager at Kotzebue, and Roland Young, a Fish and Wildlife protection officer in the same village. Dinnocenzo told Eaton that local residents took skiffs up the lowest portion of the creek. Young said that from the air he had seen boats one to two miles up the Shiliak and a thirty-foot wooden boat beached about a half-mile up. He was curious how far up he could go on the creek and so in 1982 and 1983 he took an eighteen-foot aluminum riverboat powered by a thirty-five-horsepower outboard motor up the Shiliak. Both times he traveled to a wide portion of the river or a small lake coinciding with the location of the uppermost Native allotment accessed by boat, that is the parcel in the NE4, Sec. 8, T. 19 N., R. 16 W., Kateel River Meridian. Young described the water body (in Eaton's words) "as a deep, gravel-bottomed, slow moving, meandering stream which becomes very shallow quickly just a few miles upstream." Beyond the point to which he boated, Young believed "the creek would be not only too shallow but also too obstructed by trees to be passable." 164/

## KOBUK RIVER

The Kobuk River, which is open from mid May to the later half of October or early November, has long been a primary route of travel in the interior of Northwest Alaska. The earliest white explorers of the river, Lieutenants John C. Cantwell and George M. Stoney, commented on the Natives' travel on the river. Cantwell wrote that one-man birchbark canoes were common, except on the lower river where the sealskin kayak predominated. The birchbark canoes were eight to ten feet long and twelve to fifteen inches broad at the water line. Natives who canoed up to the vicinity of Jade Mountain in 1884 informed Cantwell that they did not boat all the way up the river "as the channel is filled by rocks and the banks are so steep that it is impossible to tow." In 1885 Cantwell learned at a Native village just above the Pah River that the Eskimos customarily cached their boats at a falls not far below Walker Lake. There they would wait until snowfall to venture further into the interior. 165/

Stoney rendered a far more extensive description of Native boat travel on the Kobuk. Although he stated that his account was applicable to the Noatak's and Selawik's inhabitants, it probably was most reflective of Stoney's longer stay on the Kobuk. Because of its value, his statement is quoted at length:

When the river breaks traveling begins, some go to the mountains, and others to the coast. Those going to the coast carry their families and all their possessions in large skin boats (oomiaks). . . . Two or three small families often go in one large boat. They follow a day or so behind the ice.

Stops are made on the journey to catch fish for immediate use and for use at the trading station. A rich man travels in state; he never takes any other family than his own; he hires paddlers and a steersman; and enjoys all the luxuries he can. In returning up the river, they track along the banks using dogs. A sealskin tow line

twenty to thirty fathoms long is made fast to a knee one-quarter the length of the boat from the bow, and four to six dogs are harnessed to the other end. A boy goes ahead as a dog leader and a man follows as driver; the latter's position is not an easy one; sometimes a dog will go to one side of a bush and the next dog the other side, or the head dogs will go over a fallen tree and the others under it, causing trouble and a dog fight and necessitating a delay to straighten out again. About two miles an hour is made in tracking; delay is caused by the dogs having to be shifted often from one bank to the other in order to get good footing. Occasionally in places dogs cannot be used and recourse is had to poles and paddles. Whenever the wind is fair sail is made. Lazy Natives often wait two or three days for a wind rather than pole or paddle. Should a boat be under way all night as sometimes happens, the occupants stand regular watch.

On the return trips they fish a great deal, loading the boats down with the catches. Whenever stops are made boats are discharged, hauled up and turned bottom up to dry; tents are pitched, and camp made. In times of great hurry tents are not pitched, shelter being found under the lee of the boats. 166/

Stoney's 1883 excursion up the Kobuk is the first recorded white travel in the drainage. Stoney with a man named Tucker and two Natives pulled a "dinghy" sixteen hours a day to a point at the head of the delta. They then proceeded forty miles farther up the Kobuk, which Stoney stated meant "Big River" in the Natives' language, before turning back to their base ship. 167/

Stoney returned in 1884 with three Navy men, five Natives, the steam cutter Helena, a dinghy, a "six-ton skin-boat in tow," and provisions for forty days. They entered the mouth on July 19 and traveled upriver in their steam cutter a distance Stoney estimated at 275 miles. At this point he found that "the current became so strong, and the sounding out a channel in the low river so tedious" that they abandoned the steamboat in favor of their skin boat. Paddling was not successful, so the men began tracking with an eighty-yard sealskin tow line. The men continued tracking twelve hours a day for five days. On the fifth day they pulled through boulder-strewn, six-feet-deep rapids with a current of six or seven knots. Six miles farther upriver they reached what is today known as Selby River. Because the men were exhausted and suffering from sore feet, Stoney decided to turn back. By August 22 the party was back at Hotham Inlet. 168/

Stoney returned the following year for what would be the most extensive investigation of inland Northwest Alaska until the twentieth century. After his 1884 excursion, Stoney received orders to submit a plan to his superiors for a sixty-foot, flat-bottomed steamboat. In 1885 he had "the boat", presumably on his design, named the Explorer, plus the Helena, three skin boats, a sawmill, and twenty months' provisions. His personnel included seventeen Navy men, three Native men, and the families of two of the Natives. 169/

On July 17 the Explorer and Helena began towing the three skin boats up the Kobuk. Because they had so much supplies, the boats made the trip in relays, bringing one batch of supplies up about one hundred miles, unloading, and returning for the remainder. By August 17, the boats had transported all stores and personnel 218 miles to Cosmos Creek, which bears the name of the winter headquarters Stoney established there. Stoney overestimated the distance they had traveled; he believed Fort Cosmos was three hundred miles upstream. In preparation for winter, Stoney sent three Navy men and some Natives upriver to buy and catch fish for dogs in the winter and to explore the

mountains. Beginning September 9, the men tracked a skin boat an unstated distance upriver using dogs. They returned to Fort Cosmos on September 23. Two days later Stoney maneuvered the Explorer and the Helena up a nearby creek for the winter. 170/

Stoney or detachments from his party explored extensively through the winter. In December parties examined the Noatak's headwaters, Selawik Lake and River, and visited St. Michael and the Yukon River. In January, Stoney made observations for the triangulation of the Kobuk valley. He spent all of March exploring the headwaters of the Kobuk and sent Ensign W. L. Howard north to the Noatak.

On May 27, Stoney launched the Helena. Three days later he had that vessel tow the Explorer three miles up the creek in which they had wintered in order to prevent ice damage. Beginning on June 8, the steamboats transported their supplies to the mouth of the Kobuk. All the supplies were brought down the 17th. On the same date Stoney began triangulating the head of the Kobuk valley. He continued this work to the delta where he arrived on June 25. 171/

Stoney recorded a general description of the Kobuk. He counted thirteen mouths to the river. The smallest and shallowest emptied into Selawik Lake; all the rest emptied into Hotham Inlet and had mud bars "with very narrow channels from three to fourteen feet deep at their mouths." He stated that the entrance opposite Nimiuk Point (probably that today known as Riley Channel) was the widest and carried two fathoms of water over its bar. However, it quickly narrowed and became more winding. Stoney preferred Nazuruk Channel for navigating. It was fifty yards wide with a twenty-yard channel carrying two fathoms. Moreover, after crossing the bar, Stoney stated that it became wider and deeper. Seven miles above the bar the channel was well over a half mile wide and was thirty feet deep at midstream. 172/

Forty miles above its mouth Stoney said the Kobuk lost any evidence of tidal influence. Five miles farther up sand bars appeared. They increased in number and extent toward the source. Two hundred and fifty miles up (using Stoney inflated river mile calculations) boulders were on the banks. They gradually encroached into the riverbed until they were in midstream "with the water swirling about them" in the vicinity of Fort Cosmos. Thirty miles farther up, Stoney stated that "they became very numerous and dangerous." Stoney found the river's depth to be "quite regular with deep holes here and there its entire length." He wrote that the river near its mouth was nearly thirty feet deep, but shallowed gradually to six feet near the Pah River and then dropped further. The tributaries above the Pah, he noted, were all "too small for any extended navigation beyond their mouths." 173/

Stoney also reported general descriptions of the river's width and current. In low country the Kobuk spread over twelve hundred yards and frequently was dotted with islands. Eventually the river narrowed to fifty yards and near its headwaters "it twists and turns, finally becoming a narrow, sinuous mountain stream." As to the current, Stoney said it was least in the widest places and during low water. But "higher up . . . it attains, around the curves, a velocity of three and five knots; while still higher, rapids and rushing torrents are met." 174/

Lieutenant Cantwell visited the Kobuk in 1884 and 1885 leading U.S. Revenue Marine contingents. On his first trip up the Kobuk, Cantwell with six men under him and equipped with a steam launch and two small boats ascended about to where Stoney established Fort Cosmos the following year.



On July 10, 1884 they entered the Kobuk, probably via Riley Channel. Cantwell described the channel at its mouth as two hundred yards wide with two and one-half to three fathoms of water. Through the following day as they traveled thirty miles upriver, the current increased from two to three knots and the depth from three and one-half to five fathoms.

The channel was extremely sinuous. They passed a Native village in this stretch of the river which Stoney had passed the previous year. On the 12th the party reached the first timber on their route and passed what a Native guide reported was the most northerly and westerly Kobuk distributary, what today is known as Melvin Channel. Some distance above this point they calculated the river's depth at six to eight fathoms with a current of seven knots. 175/

During July 13 the current strengthened and the river narrowed. By 1 p.m. the next day, they reached Squirrel River. Above this the river divided. The channel Cantwell chose had many sandbars and they had trouble maintaining sufficient steam to move against the current. Early the next day they cached a skiff they had been towing. The current weakened that morning and after three hours they emerged from the mountainous country. On the 16th they encountered their first rapids and were only able to advance six miles. In the rapids the launch grounded and the men righted it by promptly jumping into the river. They tracked the launch through the worst part of the rapids. The next day they took soundings; the depth was twelve to thirty feet and the current varied from two to six knots. They encountered more rapids on the 18th. Here the depth decreased to six feet and the current reached seven knots. Only with a surge of steam were they able to ascend the rapids. Above the rapids they came to smooth water. The rest of that day the current varied from almost imperceptible to a speed so strong as to make progress nearly impossible. On the 19th they traveled about sixteen miles upstream, occasionally running onto sandbars. They made twenty-six miles on the 20th thanks largely to a favorable wind, which they harnessed by hoisting a sail.

However, the next day their launch travel ended. They came to a large sandbar around which the current flowed so fast as to prevent the launch from moving half the speed of the skin boat, which the Natives poled and tracked upstream. Cantwell turned the launch down the Kobuk to find a safe anchorage. He stopped about eleven miles downriver where he left the launch near a fish camp Natives who had ascended the river in canoes were just then establishing. How far Cantwell had taken his steamer is uncertain. However, since he dispatched men to explore Jade Mountain from where he turned the launch around, he must have gotten some distance above Hunt River on July 21. 176/

After making some repairs on the launch, Cantwell's party resumed their upriver journey, paddling and tracking a birchbark canoe and a skin boat. On July 24 they met the two men Cantwell had sent to Jade Mountain. Cantwell sent these two men and one Native helper back to the launch while he and the four others in the party continued upstream with the skin boat. They traveled approximately thirteen miles up the Black River on July 27 to reach a Native village where they hoped to acquire a replacement for their water-logged and worn boat. However, they could not get one there and the next day spent eight hours portaging northeast via two unnamed lakes to a point on the Kobuk that Cantwell estimated was thirty-five miles above Black River. 177/

From here the men paddled up to a fishing settlement where the men repaired their boat and Cantwell calculated his options. Based on the Natives' information, Cantwell believed he was 275 miles from the falls which he understood was the head of navigation. He believed he could travel this distance in twelve days, but he only had five days' provisions. His skin boat was in poor condition and he feared an accident to it

could jeopardize the entire party. Finally, the water level was dropping. Therefore, Cantwell determined to return to the launch and make an upstream effort with it. 178/

On July 29 they descended most of the distance to the launch. The next day Cantwell walked to Jade Mountain while he let the skin boat dry. When he returned to the river on the 31st, Cantwell learned that Stoney had passed going upstream. Cantwell resolved to follow him with the launch. However, the launch was in no condition to proceed upstream and the river's water level continued to fall. Therefore, on August 2 they began the long journey back to Hotham Inlet. The steam engine could not supply sufficient power to control the boat in the current. Consequently, the men had to use oars and they frequently grounded on sandbars, requiring them to jump overboard to push the launch into deeper water. The current was so swift on their second day of travel downstream that they averaged between four and four-and-one-half miles per hour unaided by any other force. By August 5 they passed Squirrel River and on the 7th they steamed through the delta, where there was little current to carry them, and reached Hotham Inlet. 179/

In 1885 Cantwell led an expedition up the Kobuk to Walker Lake (Cantwell called it Lake Car-loog-ah-look-tah). In early July Cantwell, three other whites, and a varying cast of Natives proceeded upriver in a steam launch and a twenty-eight-foot skin boat called the Pioneer. Natives from nearby villages helped pull them through the first two sets of rapids; twenty Natives helped at the second in the area about midway between the Squirrel and Ambler rivers. By July 5 they reached the Jade Mountain area. The next day the men had to jump overboard to push the launch off sandbars as the river shallowed. This continued as a regular practice until the morning of the 11th. By then they calculated they had reached 156 degrees 51 minutes West longitude (above present-day Kobuk). The river was two hundred yards wide, filled with gravel beds, and immediately before them was a boulder-strewn rapids. They tried getting through with 110 pounds of pressure combined with towing, but the line broke. Consequently, Cantwell abandoned the launch, leaving three men behind with it. 180/

The men had a difficult time lining the skin boat through. Nowhere above was there more than six feet of water. On July 12 or 13 they passed the Pah River and then came upon a Native village. East of the village they adopted the Native practice of poling because lining was difficult in the boulder-strewn river and because paddling such a large vessel against the eight-knot current was impossible. On the 16th they passed Reed River and came to the thirty-yard wide gorge the Natives considered the head of navigation. Rapids a mile long coursed through the gorge. Cantwell found that an old Native portage was overgrown. Since they could not back-pack their instruments to Walker Lake, Cantwell had his men lay logs along the rocks, walk the supplies over these logs, and line the skin boat, which then drew no more than four inches, through the rapids. One Native was almost fatally injured when he fell into the river. Above the gorge they continued to line though there was little current. They made slow progress through shoals and gravel bars. On July 21 they passed through an area with no more than a foot of water. That same day they reached Walker Lake's outlet. It was sixty yards wide and four to six feet deep at its mouth; it was somewhat wider and much deeper than the mainstream. 181/

Cantwell decided to first explore Walker Lake. They boated up to a set of rapids. Here they left the boat. By then the lake was only a two-and-one-half hour walk and there was no need to endanger the dilapidated vessel. After examining Walker Lake, they took their boat up a small left-bank tributary of the lake's outlet, crossed a swampy plain, and made a short portage to the Kobuk above the outlet. At this point the Kobuk was less than fifty yards wide and scarcely more than a foot deep anywhere. Throughout

July 24 "we pushed the boat up the shoal stream past the mouth of a small stream called the Kit-chah-ee-yak [Kichaiakaka Creek], and did not rest until the lightened boat, drawing five inches, would no longer float. The river was now nothing but a shallow brawling brook, tumbling down from between the rugged mountains." 182/

The same day they began their descent. They did not get back into their boat until they reached Kichaiakaka Creek. Cantwell's craft shot a set of rapids, damaging the boat so they had to stop to make repairs. On the 25th they came to the head of the gorge where they removed their supplies and lowered the boat through with a rope. Later that day they came to the village above the Pah. They traveled at a rate of eight to ten miles per hour without paddling below the village. On July 27 they pulled into shore beside the steam launch. The next day they boarded their launch and continued downstream. They ran aground once that day and the next day they stopped to fish and await higher water. Through much of August they examined the lower portion of the river. On August 22 they steamed into Hotham Inlet. 183/

It may have been that no whites ascended the Kobuk for the next dozen years; at least there is no written record of such an ascent. However, the great overflow of prospectors from the Klondike penetrated the region in 1898 and 1899. The published records of two participants in this rush give some indication of the extensive boat use by whites on the river during those years.

George L. Webb's diary of his travels on the river in 1898 and 1899 is not always clear, but it does show extensive boating. From July 25 to the 27th he traveled up from Hotham Inlet to the Squirrel River in a steamboat; probably the stern-wheeler Kotzebue. The pilot evidently had only a vague notion of the course of the Kobuk. He unintentionally took the steamboat some distance up the Squirrel on the 27th. They returned to the main river and by August 4 had made camp at a point Webb considered to be ninety miles below Fort Cosmos and two miles below a set of rapids. Many others on the river built caches here and proceeded upstream in small boats. Webb's party, however, continued upriver in the Kotzebue on August 17. Webb's records show that another steamboat, the John Riley, went up at least as far as the Hunt River. On the 25th Webb began towing his own boat upriver. Dorothy Jean Ray, who edited Webb's diary, believed Webb covered the distance from the Ambler River to the Kogoluktuk between August 28 and September 13. For this distance Leo Chase and two brothers named Reeves accompanied him. On September 13 Webb wrote that "We are making slow progress. There is too much current." Two days later they performed "hard hard towing all day" 184/ and thus reached a camp about a dozen miles 185/ above the Kogoluktuk where the Kotzebue had deposited some of their supplies. That fall Webb panned for gold on the Kogoluktuk and then wintered in that region. 186/

The next year on July 5 Webb began boating up the Kobuk. Presumably he used a riverboat or pole boat. He continued upstream until August 3, by which time he reached the Reed River. On the way he picked up a kayak he had at a cache. This may be a cache he later referred to as twelve miles below Reed River. His diary does not make it clear how the kayak got there. Two days' travel below the Reed, Webb noted other prospectors caching their boat.

Webb spent some time traveling and prospecting on the Reed River. He then descended the Reed and Kobuk, reaching his cache twelve miles below the Reed on August 15. He continued downriver for four days to an unknown point where he and a partner named Hughes began to track and occasionally sail upriver. They got to the Reed River by September 3 where they built a cabin. That same day four men in two boats passed by and two days later he saw six Native women go up and then return down pass the cabin Webb and Hughes were building. Later in September the men went downriver and then

brought supplies back to their Reed River cabin. They moved into the cabin by September 27. Two days later Webb recorded that there were thirty-two whites still in the area. These men had been "busy all summer boating their stuff up the river." 187/ This winter would be Webb's last on the Kobuk.

In 1900 Joseph Grinnell's mother published an account of his stay on the Kobuk in 1898 and 1899. It was based largely on his letters to her and is considerably clearer than Webb's diary. Grinnell went to the Kobuk eager to experience the gold rush, but even more interested in pursuing his naturalist studies of birds. In May 1898 he left California as a member of a group on the Penelope. The ship reached the Kotzebue Peninsula on July 13. Grinnell estimated that there were a thousand people in the Sound. Within a week the group built a river steamer, which they called the Helen. It was a stern-wheeler about thirty feet long and ten feet wide. Since it could not carry all the men's supplies, they also built a barge two feet deep, ten feet wide and eighteen feet long. 188/

On August 5 the Helen took the barge upriver with two-thirds of the supplies. The Penelope group proceeded to relay their equipment and provisions up the Kobuk in the same manner as had Stoney. By August 28 they established Penelope Camp at what Grinnell estimated to be 170 miles from Hotham Inlet and thirty-five miles below the Ambler River. He wrote that "The 'Helen' is a failure, else we should have been much farther up the river. The river is swift and has many rapids which we could not stem. The boat is slow. Her wheel is too small. . . . It took five days to come this far." And they still had to bring up two more loads. On the way up, they, like Webb's party, had accidentally steamed up the Squirrel River. They went up this tributary for twenty-four hours before discovering their error. After returning to the Kobuk they decided to leave their barge behind and made good time until the first set of rapids. Here the Helen kept sliding sideways and losing ground. They had to tow her through. Grinnell's group encountered six such rapids up to Penelope Camp. Grinnell could take little comfort in knowing that others had fared worse. He observed thirty parties in one day towing their provisions; some of these had lost their steamboats. Grinnell wrote that only three of the dozen or more steamboats on the Kobuk succeeded. More discouraging must have been the hundreds of disillusioned men he saw floating back to Hotham Inlet. 189/

On September 1 the Penelope group decided to split in two. One party took the Helen farther upriver and wintered there; the other stayed at the lower Penelope camp. Grinnell stayed with the latter group, which prospected the Hunt River. The former ascended the Kobuk up to the Kogoluktuk. They took the Helen six miles up this river to winter. 190/

During the winter Grinnell spoke to a German who skated on the Kobuk collecting mail. The "Flying Dutchman", as he was called, showed Grinnell a map he had made of the prospectors' winter camps he had visited. The skating mailman had not been above the Pah River, but he reported that there were camps up to the Reed River. He estimated that there were eight hundred whites wintering on the river. Below the Pah he identified twenty-eight camps. Several of these were named for steamboats known to have plied the Kobuk that summer. It is at least possible that these camps bore their names because the steamboats had reached these points. Camps named after the Iowa, Agnes Boyd, and Riley were two to sixteen miles, respectively, below the Kogoluktuk. The "Flying Dutchman" noted the upper Kotzebue camp eleven-and-one-half miles above the Kogoluktuk and a camp he named after the Nugget six miles higher on the river. The names of other camps above the Nugget camp which might have been associated with riverboats were named Guardian (20 miles below the Pah), Davenport (15 miles), Leslie D. (10 miles), and Ralston (2 miles below the Pah). 191/

The Penelope men like many others did not remain on the Kobuk for all the summer of 1899. By June 2 the Helen arrived from the upper camp. Four days later Grinnell wrote that: "Nearly everyone above has already passed down the river in all sorts of boats and rafts." The full crew of the Helen began downstream from their lower camp on June 8. By July 1 they were off the Kotzebue Peninsula where Grinnell saw a half dozen other river steamers. 192/

Two years later Walter C. Mendenhall led the first U.S. Geological Survey expedition to the Kobuk. Mendenhall and seven others, including a Kobuk Native named John, ascended the Alatna River and Helpmejack Creek in Peterborough canoes to a portage to Kichaiakaka Creek. They began floating this creek on August 8 about seven miles from its mouth and reached the Kobuk on the 10th. At this point the river was 125 feet wide and six or eight feet deep, Mendenhall noted in his published report. However, in his field notebook he claimed the river was 150 feet wide and that six to eight foot water only existed in pools. On the 10th they portaged one rapid and lined another before reaching the outlet of Walker Lake. They traveled up to a rapid a mile below the lake on the 11th. The next day they took their empty canoes through the rapids and most of the way to the northern shore of the lake. On the 13th they resumed their downstream expedition. They came to the mile-long gorge on August 14. Although John was very familiar with the portage he had never traversed the gorge in the summer. He had received bad reports about it, though. Nevertheless, Mendenhall wrote that "passage in light canoes was not at all a serious matter. After an hour's work the entire outfit was taken through, one slight puncture being the only mishap." The rest of their trip was uneventful. They reached the outlet of Lake Selby on the 17th, explored the lower Ambler River for a few days, and reached Hotham Inlet on September 3. 193/

A prospector who wintered on the river in 1900-01 told Mendenhall that the John Riley still steamed on the Kobuk. In 1908 Alfred H. Brooks of the USGS reported that one or more steamers continued to supply miners. He noted that they took equipment and provisions to Shungnak from where poling boats and dog teams continued the trip to the mines. 194/

Two years later Philip S. Smith, Henry M. Eakins, and two camp hands made the USGS's second expedition into the Kobuk valley. They left the Koyukuk near the mouth of the Hogatza with a six-horse pack train on June 22, 1910. The men traveled overland to the upper Kobuk, fording the river just below Beaver Creek. Smith's party continued to use horses to Shungnak which they reached July 22. On August 10 they began floating down the Kobuk in a skiff, reaching Kotzebue ten days later. 195/

Concerning the river's characteristics and its boat traffic, Smith stated that travelers reported little more than one fathom of water over the bar at the entrance of a channel Stoney described as carrying two fathoms. The channel referred to was either Riley or Nazurak. Smith described the Squirrel River to Reed River segment as being one-quarter to one-eighth of a mile wide with no obstructions to navigation, though a one- to three-mile-per-hour current made tracking necessary. Above Reed River the Kobuk decreased in width and its depth varied. Near the mouth of Beaver Creek it was fourteen feet deep, but Natives told him that above Kichaiakaka Creek the river split into many streams "all of which are too shallow even for canoe navigation." 196/

Smith wrote that the Kobuk was navigable for boats drawing three feet of water up to the village of Shungnak and that "an even greater draft could be carried if it were not for shallow bars at the mouth of the river and the crooked, shifting course of the channel farther upstream." 197/ He stated that "small gasoline launches or scows which draw only 2 feet of water or less" carried passengers at fifteen dollars each and freight at the

same rate per ton to the mouth of the Squirrel River in one to two days. The same type vessel could reach Shungnak in six to twelve days. 198/

In October 1907, after rafting logs from fifteen miles upriver, the Bureau of Education's Eli M. Myers erected a schoolhouse around which the village of Shungnak arose. The following summer Myers went to Kotzebue to pick up supplies for the following year. The supplies arrived on September 5. Myers hired a launch to take the sixteen tons of goods upriver. At the mouth, the river was so low that they had to wait twelve hours, presumably for the water to rise, before they could proceed. Low water again halted progress near the mouth of Squirrel River. Accommodating Natives took Myers' wife and some of his goods farther upstream in skin boats. When another launch reached Myers', both took a portion of the school's supplies and they placed another part on the shore. The two launches were able to take the supplies to the Salmon River. By then ice ran in the Kobuk. The travelers cached the supplies which had been on the launches. Presumably the launches then returned to Kotzebue. Myers hiked three days to a point ten miles below Ambler River where he found his wife's group where the Natives' boats were frozen. They sledged to Shungnak and over the ensuing weeks sledged the supplies up to the village. 199/

Given their annual journeys down to Kotzebue and the presence of white miners in the area, it is not surprising that the Shungnak Natives learned how to make wooden boats. Myers reported in 1910 that the villagers were building twelve boats, "from a small fishing boat to a large boat 40 ft. long [with an] 8 ft. beam." In the winter of 1911-1912 Shungnak residents whipsawed six thousand feet of spruce with which they constructed more than twenty boats that spring and summer. The boats sold for twenty to 150 dollars. The Natives also made two birchbark canoes. Myers' successor's report on activities at the village in the year following June 1918 also mentioned boats being built, the most noteworthy being two hulls for gas launches to be sold to white men. 200/

Noorvik's Bureau of Education teacher, Delbut E. Replogle also reported on Native boat building in his village for the school year 1918-1919. He stated that three students built a twenty-six-foot V-bottom boat into which Replogle installed a fifty-four-horsepower engine. The teacher also wrote that the villagers built four "small boats" and "a number of small kyaks [sic] or canoes." They were constructing two thirty-foot boats when Replogle wrote in the summer of 1919. 201/

Boats were an important means of transporting goods up to mining camps. In 1920 Alfred H. Brooks of the USGS noted that boats took supplies from Kotzebue to Shungnak for forty dollars a ton. Harry Brown carried freight in his steamboats Imaluktuk and Mary B. Archie Ferguson was another who freighted goods up the Kobuk in this period. The Partner and Shungnak were his boats. He later recalled that "every year the channel changes, gittin' wider'n' shorter. Once I got stuck on a bar for three weeks, but when she raises she raises fast." 202/

In 1940 James L. Giddings conducted the first archaeological survey of the Kobuk drainage. He flew to Allakaket on the Koyukuk in early July, walked to Norutuk Lake, and then hiked west to the Kobuk. He wished to begin rafting as soon as possible, but hearing and then seeing from a hilltop, the rapids through the gorge not too distant below him, he continued hiking. Once past the gorge he built a raft. He floated unhurriedly, reaching Mauneluk River after three days. There he encountered two Native families at their annual fish camp. They told him that there were some house pits in the area, including some above the Mauneluk, but they knew of no one living above them and had never seen anyone come from upriver. Indeed, when they first saw Giddings, they

suspected he was a downed aviator. One of the men at the camp provided Giddings a ride in a canvas-covered kayak to Long Beach, an old Native camp near the village of Kobuk. It took four hours to make the trip. At Long Beach, Giddings observed women netting fish using a "light wooden boat." He learned that they had formerly accomplished this task using birchbark canoes. Giddings bought a kayak and traveled down the Kobuk, stopping at Shungnak, Onion Portage, and Kiana before ending his journey at Kotzebue. In 1941 he returned to Long Beach and traveled downriver with a white and four Natives in a kayak and a rowboat. He also boated on the river below Onion Portage in the early 1960s. 203/

The Army Corps of Engineers focused on the Kobuk's barging activity in reports in the 1950s. The draft copy of an interim report in 1953 stated that a good channel to the village of Kobuk and the river's slow to moderate current made the Kobuk a good river for barging. It stated that a six-foot channel was available to coal fields above Kiana. The Corps' report cited a Mr. Ferguson, probably Archie Ferguson, as telling them that a six foot channel existed up to Shungnak until August in most years. During the navigation season from mid-May to October, between five and six hundred tons of freight moved up the river to Noorvik, Kiana, Kobuk, and Shungnak. The final copy of this interim report, issued in 1957, stated that barges could travel up to the village of Kobuk, but warned that silting had occurred in the upper portion of the river in the previous few years. 204/

B&R Tug and Barge began supplying Northwest Alaska, including the Kobuk River drainage, in 1951. According to Edith Bullock, a founder of the company and its general manager for much of its existence, B&R quickly came to dominate the bulk commercial traffic since it furnished more dependable service than their primary competitor, Archie Ferguson. B&R received supplies at Kotzebue from the BIA's North Star and a Standard Oil ship. B&R also sent one of its barges to Nome each year for more cargo. 205/

In 1951 B&R had three wooden tugs, the Little Tula, the Herald J, and the Tula, which were 36-feet, 40-feet, and 70.6-feet long, respectively. Two of the company's barges were 60-feet long and the other 80-feet. By 1964 the company added four more barges between 85 and 115 feet in length and had completely replaced its original motive power with two 50-foot wooden tugs and five steel tugs measuring between 46 and 59 feet. Bullock recalled in 1984 that all of this equipment except for the 115-foot barge could ascend the Kobuk to Kobuk. 206/

Ray Heinrichs, B&R's operation's manager from 1960 to 1970, recalled those years to the author in 1984. He contended that in 1960 air traffic carried little of the area's cargo. B&R hauled most of the region's supplies, including fuel, food, and building materials. Petroleum products accounted for most of its freight. The company brought goods up the Kobuk to villages, business ventures, and individuals. B&R dropped supplies off at fish camps and any other spot along the river upon request. He stated that, except for empty fuel cans, a little jade, and the belongings of someone leaving the Kobuk, there was little back haulage.

Heinrichs commented on other boats on the Kobuk. Three storeowners--Rob Blankenship and Lorenzo Shirk, Sr., both of Kiana and Tommy Douglas of Ambler--had their own boats with which they supplied their businesses and shipped goods for others. Heinrichs said their boats were about thirty feet long and had inboard gas engines and a cab. Villagers sometimes used their own riverboats to carry goods from Kotzebue in order to save transport costs. Aluminum boats first appeared in the area around 1960. However, even in 1970 most Natives owned wooden rather than aluminum watercraft. Heinrichs stated that the Natives did not have canoes. 207/



In 1965 the Corps on Engineers again reported more extensively on barge traffic on the Kobuk. From the B&R's records the Corps quoted the following tonnage shipped:

**Tons Transported by B&R on the Kobuk River  
1958-1964**

Year	To Noorvik or Kiana	To Ambler, Shungnak, or Kobuk
1958	506	232
1959	2,206	277
1960	436	385
1961	461	320
1962	433	415
1963	1,192	359
1964	740	344

The 1959 and 1963 figures included 1,700 and 750 tons for new schools at Noorvik and Kiana respectively. In addition to the 1964 numbers above, Kennicott Copper shipped 388 tons to Kobuk and 2,824 tons to Onion Portage. 208/

Ray Heinrichs of B&R gave the Corps some of his expertise on barging on the Kobuk. Barges went upriver by way of the Lewis Rich Channel. It had shallows of only four and one-half or five feet, but after getting past it the barge operators could take advantage of six and one-half feet of water at almost any stage of the river up to Tenmile Post (T. 17 N., R. 9 W., Kateel River Meridian). Heinrichs said that there were six or seven other shallow areas below Ambler. Running aground was such a problem for B&R that it had wheels on the bottom of its tugs to prevent damage. Still the company lost money because of delayed deliveries. Heinrichs advocated having the Corps remove some of the river's sharper bends and dredge it to a six to six and one-half feet depth to allow longer and heavier barges. 209/

Kennicott Copper's interest in extracting ore from the Ruby Creek area north of the village of Kobuk had stirred the Corps' inquiry. Kennicott conducted drilling and geological testing in the area from 1957 through 1963. Utilizing local barging services, the company apparently shipped its largest tonnage in 1964 when it took in over three thousand tons. Supplies first moved up the river about seventy-five miles where it was unloaded. Because 1964 was a particularly dry year, B&R was not able to move the freight up to Onion Portage until early September following rains. From there Kennicott hauled most of its supplies by tractors fifty miles to its mining site. Some B&R barges did make it to Kobuk, which was only a little over a dozen miles from the Kennicott operations. 210/

The Corps' report included its own assessment of dredging the river. It stated that the Kobuk's current averaged between three and four miles per hour. The Corps believed that there was sufficient water to allow navigation throughout the open season if dredging eliminated the bars and riffles. It theorized that if obstacles were removed early in the season that the river would stay open and possibly even deepen itself. Heavy work also was needed to straighten some bends which prevented tug and barge combinations longer than 180 feet. The Corps concluded that both dredging and the straightening of bends was necessary for barges to deliver at least 40,000 tons downriver within ninety days. Presumably the 40,000 tons was the projected Kennicott ore output. 211/



Although Kennicott continued to advocate dredging and the U.S. Transportation Task Force and Deleuw, Cather, and Associates studied the question in the late 1960s (the former urged the operation, projecting a benefits-to-cost ratio of 3:1), no dredging occurred on the Kobuk. Nevertheless, barges continued to supply river communities. In 1974 the Department of the Interior reported that "deep draft barges reach as far up the Kobuk as Kiana. Shallow draft barges can reach Ambler during most of the ice-free season." Four years later a report prepared for the Department of Commerce stated that "the villages of Kiana, Ambler, Shungnak and Kobuk, . . . are also served by barges . . . . The river is navigable after spring breakup, at least as far east as Kiana, and periodically an additional 100 miles farther up river to Kobuk." 212/

Both Natives and visiting whites have utilized riverboats and smaller recreational craft on the Kobuk since WWII. In a publication issued in 1962, Dorothy Jean Ray stated that river Natives then used outboard motors on boats of sawed lumber. A photo of Natives at the village of Kobuk displayed a variety of watercraft. There were two pointed-bow riverboats, at least one of which had an outboard motor. The photo also showed a square-bowed riverboat with a motor and a pole boat or canoe. 213/

In 1965 Don Charles Foote conducted an ethnographic study of the upper Kobuk River, focusing on Shungnak. With the assistance of Bryan Greer-Wootten, he calculated that the river's current at the village was between two and one-half and three miles per hour and that after heavy rains the river could rise an inch or more per hour. 214/ More interestingly, he traced the history of the Natives' watercraft, making valuable use of unpublished Bureau of Indian Affairs records. Foote stated that the upper Kobuk Natives traditionally used sealskin-covered and birchbark-covered kayaks, birchbark double-pointed riverboats, and umiaks. He stated that as early as 1913 some Natives adopted wooden boats. However, the older craft persisted. There were ten or twelve seal skin kayaks in 1916; most families had the birchbark variety. According to Kobuk resident Harry Brown in 1965, there still were about a half dozen umiaks on the upper Kobuk in 1920, which inhabitants used to travel to and trade at Kotzebue. Guy Moyer, another Kobuk resident, told Foote that by 1939 the umiaks had disappeared and only one or two skin-covered kayaks remained. Foote stated that by then canvas had replaced birchbark on kayaks and wood replaced bark on the double-pointed boats. According to BIA records, only one outboard and three inboard motors operated in the Shungnak area in 1939. After WWII motors and, consequently, square-stern craft proliferated. Foote observed while he was at the village that "nearly every family of the upper river owns at least one outboard motor and wooden boat." 215/

Sports fishing increased on the river in the 1950s when two guides began operations there. Thereafter, airplane and float trip travel increased, according to a study by the Arctic Environmental Information and Data Center. 216/

Sportsman Steve McCutcheon provided the best published description of a recreationist boating the Kobuk. McCutcheon and his wife, Phylis, and Eugene and Delores Roguszka flew to Kiana in early July, 1962 bringing with them their twenty-four-foot, aluminum DuraCraft riverboat. McCutcheon had hired Bob Comeau of Fairbanks, "who makes the world's best engine lift for river work," to fit the boat with a lift. They also had nine hundred pounds of supplies, a thirty-horsepower Evinrude, and a five-and-one-half-horsepower Johnson. The boat's total weight including passengers was 3,100 pounds. 217/

Below the village of Kobuk their journey was uneventful. However, on July 16, as they traveled above the village, the current averaged six or seven miles per hour and bars became more numerous. After hitting one bar, McCutcheon had to hammer out a bent

propeller. He wrote that "propellers took a real beating on the upper river, [and] required a frequent hammering and filing to keep them usable at all." Before getting to Selby River they had to line the boat on at least two occasions and just below the Selby, McCutcheon constantly manipulated the motor and lift through a difficult swift water chute.

For ten miles above the Selby they had "tough driving" because of shallow water in a braided stretch. Following this ten-mile section they entered "wide, still, deep water." After passing Bear Island, they lined the boat several times over shallow spots. This was neither difficult nor dangerous. As they passed one tributary after another upriver they noticed the river getting smaller. On July 18 they cached twenty gallons of gasoline and some other gear. Overnight the water level had dropped several inches and as they continued upriver, boulders began showing up throughout the river. By lunch time McCutcheon had to hammer out dents in the prop.

Later that day they reached the Kobuk's lower canyon, which McCutcheon described: "Here the water was white where it coursed over or around the boulders. The channel was often six feet wide between the boulders and the water raced along at ten to twelve miles and [sic] hour." McCutcheon noted that "by this time our sleg, at the bottom of its extra-length [sic] shaft, was banging boulders too frequently to suit me. No matter how I handled the lift it was impossible to avoid all of them and it got to be slow, rough going." McCutcheon fixed a sheared pin and then scouted ahead in vain for pools; "for nearly a mile all I could see was white water and boulders." With this information, all agreed to turn back. Still on the 18th, they reached a point thirty miles below the canyon without incident.

On July 19 they met two Native adults and a boy. They at first were skeptical that anyone could go up to the canyon with the water so low. However, after McCutcheon demonstrated the use of the lift, they found the trip credible. The next day they easily traveled through the chute and shallows which had given them considerable trouble on the way up. McCutcheon recorded no more incidents for the rest of their downriver trip. 218/

McCutcheon ended his story by summarizing his experience on the river and giving advice to those who might wish to take the same trip. They had hoped to reach Walker Lake, but the water was too low. Nevertheless, he believed he was the first white to take a powerboat up to the canyon. He did not recommend the trip to the complete novice, but stated that "anyone who can handle a small boat should have no trouble." Those who were just out for fun, he suggested, might want to stop at the Selby or possibly the Reed River, since the upper river could cause problems, especially at low stages of water. 219/

In the 1970s the Department of the Interior became interested in the Kobuk as a potential Wild and Scenic River and in the surrounding terrain as part of a wilderness area. Alaska Task Force personnel flew over the upper part of the river in or before 1973 and were not impressed by what they saw. However, John Kauffmann, another member of the task force, was skeptical of the overflight examination. In 1973 he and another man made a four-day foldboat trip from below the Upper Kobuk Canyon to the mouth of Selby River. Kauffmann reported favorably on his Kobuk experience and, consequently, the Department again investigated the upper river in 1974. 220/

Seven people participated in the 1974 float trip on the river from Walker Lake to Kobuk. Buff Bohlen, an assistant deputy of the Interior, traveled the uppermost portion of the river. Halfway through the journey he flew out on a helicopter which brought Debbie Clausen of the Fairbanks Center for the Environment to the Kobuk. She made the rest of

the trip. Ted Swen, chairman of the Alaska Planning Group, and his son Ted, Jr., came from Washington, D.C., for the trip. Others on the expedition were Scott Grundy of the ADF&G, Ed Porter of the University of Alaska, Fairbanks, and Patrick Pourchot of the Bureau of Outdoor Recreation.

Pourchot kept a log of the field examination. On August 8 they flew to the lake's outlet, where they fished. Pourchot hiked down to a set of rapids about three-quarters of a mile below Walker Lake which he believed impossible for a canoe to run. On the 10th the six men began canoeing downstream in three seventeen-foot Grummans. Pourchot described the distance down to the rapids as easy class I water, but the subsequent rapids as class V for a third of a mile. He noted four major drops of several feet for a total drop of about twenty feet, many boulders and "lots of hydraulics, and cross-currents, haystacks, and no clear channels or chutes." After portaging, they paddled through a half mile of class II whitewater "requiring maneuvering around racks and through riffles but not dangerous." One chute had a two-foot standing wave, but below this stretch all the water encountered that day was class I. Pourchot noted that the main river had only slightly more water than the lake's outlet stream. At their confluence, the river was twenty-five yards wide, four to five feet deep with ten foot holes, and a three- to four-mile-per-hour current. They camped that night about eight miles below Walker Lake, having traveled for about two and one-half hours.

The men traveled thirteen miles in about four hours on August 11. Pourchot described the Upper Kobuk Canyon as "easy Class II water . . . with 1/2 mile stretch of scattered boulders requiring some easy maneuvering." The rest of that day's travel was through class I water with few riffles. They stopped for the night at the outlet of Nutuvukti Lake where the river was forty yards wide, four to five feet deep, with a three- to four-mile-per-hour current. He noted few gravel bars and the river appeared to have "fairly stable water levels."

On August 12 the party reached the Lower Kobuk Canyon. Pourchot wrote that it was three-quarters of a mile long and consisted of three sections of rapids. After scouting ahead, all three canoes ran the first 150-yard set of rapids, which Pourchot described as "low Class III" with two-foot standing waves below the first chute, strong current, and some rock outcrops requiring "some easy but critical maneuvering."

The second set of rapids was a quarter mile downstream and consisted primarily of two chutes. The men scouted ahead. Two chose to line their canoe through these rapids along the right side. The others shot the first chute without shipping water. It was a class III rapid and below it the men had to do fast and careful paddling to pull up on the right bank because of the swift current. Pourchot described the second chute as a "5 or 6 foot v-shaped chute through which the whole river plunged with a 3 foot high surge swell at the end. It appeared too heavy to take an open canoe through without filling with water." Therefore, all lined around it. The last set of rapids in the Lower Kobuk Canyon was a third of a mile downriver. It consisted of two channels divided by a continuous wall of huge boulders. Each channel had about four drops within a hundred-yard distance. Pourchot had a hard time seeing the left channel, however it "appeared to have heavier water but straighter approaches and chutes." The right channel "required several radical maneuvers between drops to go down chutes at [the] proper angle." He said both channels were class IV. Pourchot and Ted Swen, Jr., ran the right channel. Their stern hit a rock ledge on two of the drops and they took on three or four inches of water. The others lined through this section. The current was so strong that close attention and firm holds were necessary to keep their canoes from getting out into the rapids. Near the bottom those that lined had to get into the canoes and skirt along the edge because there was no bank or rocks on which to stand. The trip through the canyon absorbed two

and one-half hours. Three miles below the canyon they made camp. At this point the river was fifty to sixty yards wide, three to five feet deep, with clear water and a three- to four-mile-per-hour current.

The rest of the trip was uneventful. On the next day they traveled fourteen miles in about three hours and camped for the night a few miles below Beaver Creek. Here the Kobuk was sixty to seventy yards wide, five to eight feet deep, with a current of three to four miles per hour. On August 14 the group floated twenty-five miles in five hours encountering many "fast smooth riffles." They camped across from the Selby River. The Kobuk there was seventy to eighty yards wide, three to five feet deep and had a three- to four-mile-per-hour current. The next day they covered eight miles in roughly two hours, camping at the confluence of the Pah. On the 16th they canoed ten miles in two and one-half hours, stopping two miles above the Mauneluk River. Two miles below the Killak River they stopped at local guide Nelson Walker's new plywood house, then under construction. Walker had a riverboat in the water and a gravel bar airstrip. On the 17th the group spent two hours on the river and camped about two and one-half miles above the Kollioksak River. Shortly after leaving camp the next morning, three Natives passed them going upriver. When the government party came to a large island they took the north channel which took them to where the abandoned settlement of Kalla is marked on USGS maps. Pourchot indicated this branch was much smaller than that to the south. Above the island the river was one hundred to 120 yards wide, four to ten feet deep, with a three-mile-per-hour current. The channel they took was twenty-five yards wide, two to three feet deep, with a two to three mile per hour current. They stopped at Kalla as marked on the maps, but found nothing which looked like an old village. While there, the Natives who had passed them early in the day stopped. The Natives told the government employees that Kalla was not properly marked on maps; it was upstream where the river divided. The Natives had guns in their boat. They said they were out "looking around." Moose season had not yet opened. The government employees did not travel on August 19. The next day they covered thirteen and one-half miles in three hours of "steady, moderate paddling." They took out at Kobuk and flew back to Fairbanks, Anchorage, and the District of Columbia. 221/

In the fall of 1974 the Bureau of Outdoor Recreation drafted a report based on its research of the Kobuk's Wild and Scenic river potential above the village of Kobuk. It described the river above the Walker Lake outlet as having a five- to ten-mile-per-hour current. Up to Kichaiakaka Creek there were at least two major rapids and above the creek the river was "extremely shallow and rocky." Below the lake outlet the report indicated that the current averaged between three and four miles per hour with periodic swifter riffles near Selby River. There were "major rapids" located in the Lower Kobuk Canyon, and a two- to three-mile-per-hour current near Kobuk.

The report echoed several of Pourchot's width, depth, and white water classification figures and stated that the river bottom was generally composed of gravel or stones. Basing its conclusions on data gathered at a stream gauging station at Ambler in 1971 and 1972, the Bureau of Outdoor Recreation stated that the upper river's maximum discharge usually occurred after spring breakup in mid to late May. In June the discharge dropped substantially.

The Bureau of Outdoor Recreation report also addressed human use of the river. It stated that generally subsistence fishing only occurred up to about the Selby River and that hunting and trapping took place up to the Lower Kobuk Canyon. It was not certain, but indicated that a guide thirty miles up the river, doubtlessly referring to Nelson Walker, "apparently" used a plane or riverboat to take his customers hunting and fishing.

The report also asserted that several parties of floaters descended this segment of the river each summer, usually from Walker Lake. The Bureau of Outdoor Recreation noted that one river guide annually took a raft-load of passengers down this part of the Kobuk. The agency stated that "during most water levels boats can be taken upstream to the Lower Kobuk Canyon where rapids block further travel." 222/

In 1980 Jack Mosby of the Heritage Conservation and Recreation Service, and Howard Wagner, Ross Kavanagh, and Chuck Gilbert of the National Park Service examined the Kobuk from Walker Lake to Pah River. A floatplane landed the men and their two twelve-foot Redshank rafts on Walker Lake near its outlet on July 29. They had originally intended to float the Killak River, but bad weather prevented access to its headwaters. They chose to examine the Kobuk instead because, except for the Noatak, they believed it to receive "the heaviest recreational use of any river" in the proposed Kobuk River Monument. *GPDR*

*decide + change according to our comments*

Chuck Gilbert wrote a report of the trip in which he described the river's condition and use. He termed the current for the uppermost two miles of the outlet to be "gentle" with holes as deep as eight to ten feet. Two miles below the lake the foursome came to rapids they rated either III or IV. After examining the rapids they decided they were too rough for their twelve-foot rafts. They portaged a quarter of a mile. However, evidence of foot travel along the bank indicated that only two parties had portaged the rapids that year. The government personnel knew that more than two parties had traveled the route so they "surmised that some groups are running the rapids." Gilbert added that, "some of the commercial river companies are apparently using larger rafts, which would have little problem with these rapids." Following the rapids, riffles continued for a half mile before the river flattened out. He added that the river bottom consisted of cobbles. They camped after their first day's travel one or two miles below the outlet of Walker Lake.

On July 30 the party floated through the Upper Kobuk Canyon. Gilbert wrote that the current in the canyon was about four miles per hour and had no whitewater. It was easy to dodge the few large boulders in the channel. After the canyon the river "slows considerably." In this stretch the river bottom consisted of sand. The Kobuk regained speed about a mile below the canyon and here cobble again made up the riverbed. Gilbert stated that for the rest of the trip the bottom alternated between sand and rock, with the latter predominating. That night they camped on a sandy bar several miles below the outlet of Nutuvukti Lake.

The foursome passed through the lower canyon on the 31st. Above the canyon, Gilbert recorded that the river was no more than two to four feet deep and over two hundred feet wide. For the first mile within the canyon the current was gentle. The first set of rapids was class II. After scouting them the group ran their rafts along the right side. For the next three hundred yards they traveled through riffles and exposed rock followed by a couple hundred yards of one- to two-foot standing waves requiring some maneuvering. Gilbert considered the rapids at the lower end of the canyon to be the most challenging. Here a bedrock island divided the river. Gilbert described the water:

The right channel flows over a low shelf and then across several large rocks. Two to three foot waves lie behind these obstacles, and would require quick maneuvering in small rafts. The left channel flows quickly down a chute against the vertical wall of the canyon. A hole and wave of about 3-4 feet in height lie in the center of the channel, but can be passed on the right by quick paddling or rowing. The right channel empties into a deep quiet pool.

Gilbert and Ross Kavanagh lined their raft along the right bank; Jack Mosby and Howard Wagner shot the chute on the left. After abruptly leaving the canyon the river flattened out and at some places braided into two or more channels. For several miles the Kobuk slowed at "deep, sandy-bottomed pools" and then accelerated as it left the pools. That night the men stopped at a point about halfway between the lower canyon and Reed River.

The river presented little excitement for the rest of the trip. Gilbert made no observations of river conditions on August 1 and August 2. The first day they camped seven miles above the Selby River; the next day they reached a point less than a mile below the Selby. On the 3rd they encountered the first people on the river. Overnight a river boat had passed upstream and in the early morning they passed again going downstream. Below the Selby, Gilbert noted that numerous boulders lay in the riverbed and that many protruded above the surface. He added that "many segments of the upper Kobuk have boulders." That night the group camped on a gravel bar about five miles below the Pah River. On the morning of August 4, Ron Costello of Brooks Range Aviation picked them up and by the late afternoon they were back in Anchorage. 223/

Jack Mosby filed a brief separate report on this trip. He rated the rapids three-quarters of a mile below Walker Lake as class III. The men easily oared around four- to eight-foot rocks in the upper canyon. He indicated that the lower canyon consisted of two class II rapids followed by a series of class II to III drops near the end of the canyon. Only in the outlet did Mosby consider the water too rough for the twelve-foot rafts. Below the Pah River there were "numerous" cabins and Mosby observed that there "the river is a travel corridor for subsistence activities." 224/

Given the previous accounts of Kobuk River trips already in the National Park Services files, Jim Morris of that agency did not make any special effort to record his on a government trip in 1983. On July 18, Morris, Bill Brown, Judy Liedberg, Sandra Cosentino, and Willard Commack, all of the National Park Service, and Larry Goldstein of Alaska's Division of Land and Water Management flew into Walker Lake along with supplies and two thirteen-foot Avon rafts. 225/ Morris noted a lodge at the southeast end of the lake. On the next day they carefully examined the rapids on the outlet and decided "there was simply too many rocks and our crew too green on the first day to risk an attempt at running." They portaged for two and one-half hours and lined the boats down.

On July 20 they passed through the Upper Kobuk Canyon without any difficulty. Morris categorized the rapids as class I with a few rocks to maneuver around. Nor did the group encounter problems on the lower canyon which they traversed on the 21st. The water level was unusually low. At that stage, Morris rated the rapids as class II. The evening of the 22nd they camped on an island above Bear Island. The following night they stopped at an island above the Killak River and on July 24 they over-nighted below the abandoned village of Kalla. On July 25 they stopped at Kobuk and picked up two small motors. The next day they visited Shungnak. Here Kent Hall joined the party. He remained with the group to Ambler. Liedberg and Goldstein left the group on the 27th. By July 30 they had descended to the area of the Kobuk sand dunes and on August 1 they motored the last ten miles to Kiana, from where they flew to Kotzebue. 226/

The BLM has already determined the Kobuk to be navigable within many State- and Native-selected areas. The farthest upriver such a determination has been made is T. 18 N., R. 21 E., Kateel River Meridian, near the Kobuk's upper canyon. In June 1980 the Fairbanks District Office prepared a report stating that the river was thirty to forty feet wide and about two feet deep in the township and that people reached homesites

above this point using nineteen-foot canoes with motors. [The BLM's records show no homesites on the river in or above this township.] The report also pointed to "historic use" and "fairly heavy recreation use at the present time." The District gave the AEIDC printout and several flying services as its sources of information. The District recommended the river be determined navigable in the township; the State Director concurred on August 13, 1980. 227/

#### Kichaiakaka Creek

In 1901 Walter C. Mendenhall of the USGS, led six other men with Peterborough canoes up the Alatna River and Helpmejack Creek and portaged to the head of Kichaiakaka Creek. Mendenhall did not state how far he floated on the creek. However, he put in on August 8 and did not reach the stream's mouth until the 10th. Based upon a map in his report, it appears they canoed the lowest six to eight miles of the creek. 228/

#### Walker Lake

Explorers Lieutenant John C. Cantwell and Walter C. Mendenhall provided the earliest documented evidence of travel on Walker Lake. Cantwell, who led a four-man Revenue Marine contingent up the Kobuk River in 1885, was the first white to view Walker Lake. They dragged a skin boat, probably a umiak, to the rapids in the lake's outlet stream. On July 21 they hiked two and one-half hours to the lake. Cantwell recorded that the lake's Native name meant "Big Fish Lake" and that Natives fished from canoes on it. He also stated that Natives hunted caribou on the north side of the lake in winter. 229/ On August 12, 1901, Walter C. Mendenhall and his seven-man USGS expedition lined their canoes up the lake's outlet and then canoed most of the way to the northern end of the lake. 230/

Most documented evidence of travel on Walker Lake dates from the 1970s when recreational floating became more common. Walker Lake was the most common put-in point for float trips down the Kobuk. Airplanes with pontoons, frequently chartered out of Bettles, landed on the lake, and passengers and equipment were unloaded. A government-sponsored examination of the area took place in 1974. On August 8 the six people and their equipment flew into the north end of the lake. The next day they flew to the outlet and on the 10th they began canoeing downstream. 231/

On July 29, 1980 four National Park Service and Heritage Conservation and Recreation Service personnel flew to Walker Lake. They came into shore one-half mile east of the outlet because Ron Costello, their pilot from Brooks Range Aviation, preferred the steep shelf at this point. The water was deeper here than closer to the outlet. From here the group paddled their twelve-foot Avon rafts to the outlet. One of those on this trip recorded that other groups had already floated downstream from Walker Lake that year. 232/

The most recent National Park Service float on the Kobuk occurred in 1983. On July 18 a six-person group flew to Walker Lake. They spent that night on the lakeshore before floating down to the river in their thirteen-foot inflatable rafts. While at the lake they noted one aircraft which landed at a lodge at the southeast end of the lake and heard the rumble of the lodge's generator. 233/

#### Walker Lake Outlet

Lieutenant John C. Cantwell and USGS explorer Walter C. Mendenhall provided the first written accounts of this stream. In 1885 Cantwell led three other whites and a varying number of Natives up the river. By the time they got to the outlet they were using a skin



boat they had obtained on the coast. They reached the outlet's mouth on July 21. Cantwell wrote that the stream was sixty yards wide and four to six feet deep; it was somewhat wider and much deeper than the mainstream. He and his men boated up to a set of rapids in the outlet. By then the lake was only a two-and-one-half-hour walk. Cantwell decided to carry their surveying instruments the rest of the way to the lake rather than further endanger their dilapidated umiak. After examining the lake they took the boat back down the outlet a short distance and then up a small left-bank tributary of the outlet. They crossed a swampy plain and made a short portage to the Kobuk River. 234/

Mendenhall led seven others on a downstream exploration of the Kobuk River valley in 1901. On August 11 they took their three Peterborough canoes up the outlet to the falls. Here they unloaded the canoes and the next day they took the empty canoes through the rapids. They returned downstream on the 13th. 235/

It does not appear that the outlet was extensively traveled until the 1970s when recreationists and government personnel studying the upper Kobuk's recreational potential began to land on Walker Lake and float downstream. In 1974 six members of a Department of the Interior team landed on the lake on August 8. On the 10th they began to canoe downstream in their seventeen-foot Grummans. Patrick Pourchot, one of the participants, wrote later that he had walked three-fourths of a mile downstream to the rapids and had concluded that canoes could not run them. He stated that to the rapids the water was class I on the international white water scale, but the rapids which followed were class V for a third of a mile. He noted four major drops of several feet for a total drop of about twenty feet, many boulders and "lots of hydraulics, and cross-currents, haystacks, and no clear channels or chutes." After portaging, they paddled through a half mile of class II whitewater "requiring maneuvering around rocks and through riffles but not dangerous." One chute had a two-foot standing wave, but below this stretch all the water encountered that day was class I. Pourchot noted that the main river had only slightly more water than the lake's outlet stream. 236/

In 1980 three men from the National Park Service and one from the Heritage Conservation and Recreation Service floated the outlet to the Kobuk in twelve-foot rafts. Chuck Gilbert, one of the participants, later described the current for the uppermost two miles of the outlet to be "gentle" with holes as deep as eight to ten feet. Two miles below the lake the foursome came to rapids they rated either class III or IV. After examining the rapids they decided they were too rough for their twelve-foot rafts. They portaged a quarter of a mile. However, evidence of foot travel along the bank indicated that only two parties had portaged the rapids that year. The government personnel knew that more than two parties had traveled the route so they "surmised that some groups were running the rapids." Gilbert added that, "some of the commercial river companies are apparently using larger rafts, which would have little problem with these rapids." Following the rapids, riffles continued for a half mile before the river flattened out to the outlet's mouth. He added that the river bottom consisted of cobbles. 237/

Jack Mosby, another participant in this 1980 trip, gave a slightly variant description of the outlet. He wrote that the rapids three-quarters of a mile below the lake were class III. They portaged around for an eighth of a mile. Mosby stated this was the only part of their trip "too rough for the 12' rafts." 238/

The most recent government excursion on the outlet occurred in July 1983. Jim Morris, who wrote a trip report, noted that the National Park Service already had many notes on river conditions in its files and so paid little heed to that topic. However, he did state



that on July 19 the six people in their group examined the rapids in the outlet and decided "there was simply too many rocks and our crew too green on the first day to risk an attempt at running." Instead, they portaged for two and one-half hours and lined their two thirteen-foot Avon rafts. 239/

### Nutuvukti Lake Outlet

On August 11, 1974 a Department of the Interior team examining the Wild and Scenic River potential of the Kobuk River passed by this stream. Patrick Pourchot, who was on the trip, noted it to be twenty feet wide and two feet deep at its mouth. 240/

### Reed River

Anthropologist Ernest S. Burch, Jr., who in 1968 conducted ethnographic research on Northwest Alaskan travel, stated that Natives used the Reed River in both winter and summer as a route between the Kobuk and Noatak drainages. In summer Kobuk Natives used the route to return home after hunting in the Noatak headwaters. Near the forested upper portion of the Reed, they built rafts and floated to their families on the Kobuk carrying their harvest of caribou hides, meat, and fat. 241/

Lieutenant John C. Cantwell made the first written mention of the Reed River. He passed by this stream twice, once on July 16, 1885. He noted that it was approximately the same size as Beaver Creek, which he had earlier indicated was seventy-five yards wide with five to seven feet of water nearly all the way across. 242/

George L. Webb indicated that he and three friends traveled on the river in the summer of 1899. In June of that year they heard rumors of a gold strike on the Reed and made their way to it. Webb's diary entries were so infrequent and confusing that it is unclear how far the men boated up the river. However, it is evident that they rafted down from near its head. On August 4, Webb and at least one of his friends, a man named Hughes, reached the Reed River hot springs (Sec. 34, T. 22 N., R. 17 E., Kateel River Meridian) 243/ and made their camp at the timberline. Two other friends, George and Richard Reeves, arrived within the next week and they all began building two rafts. On August 14 they started down the river on their rafts. The Reeveses tipped over theirs. Webb "got down to my boat all right [sic] about 7:00 p.m." He was still on the Reed River. Evidently he had gotten the boat up to this unstated point earlier in the summer. On the 15th, Webb floated in his boat to a cache twelve miles below the mouth of the Reed River. 244/

There is surprisingly little other documentary information about the Reed River. In the course of collecting data about the Kobuk for its possible nomination to the national Wild and Scenic River system, Patrick Pourchot and other Interior Department employees floated down the upper Kobuk in 1974. Pourchot noted that the Reed River was twenty yards wide at its mouth when they passed it on August 13. 245/

The BLM considers Reed River to be nonnavigable. In August 1979 Keith H. Woodworth of the Arctic-Kobuk Resource Area drafted a report on a State-selection encompassing T. 21 N., R. 17 E., Kateel River Meridian. He described the Reed as "a single relatively flat bottomed channel," which "is relatively shallow with numerous sand and gravel bars limiting water depth." Woodworth, who did not give a source for his information, added that the river was forty to fifty feet wide at its mouth and that at sandbars between pools the river is only one or two feet deep. Besides the sandbars, though, "there are no obstructions to navigation." Woodworth also stated that the stream's shallowness limited its use to recreational rafts and Eskimo skin rafts at normal water levels.

He recommended the BLM determine Reed River to be nonnavigable. The following summer the Fairbanks District Office repeated the wording of Woodworth's report almost verbatim in recommending the river to be nonnavigable in Tps. 19-20 N., R. 18 E., Kateel River Meridian. The State Director concurred with this recommendation on August 7, 1980. 246/ The following month the State Director determined the Reed to be nonnavigable further downstream in T. 18 N., R. 18 E., Kateel River Meridian. 247/

### Beaver Creek

Lieutenant John C. Cantwell passed the mouth of this stream on July 14, 1885 on his exploration of the Kobuk River. He recorded that it was "one of the principal feeders" of the Kobuk and carried five to seven feet of water nearly all the way across its seventy-five-yard-wide mouth. 248/

The BLM considers Beaver Creek to be nonnavigable. In August 1979 Keith H. Woodworth of the agency's Arctic-Kobuk Resource Area recommended that the creek be found nonnavigable near its headwaters in T. 21 N., R. 17 E., Kateel River Meridian and, in a separate report, in Tps. 19-20 N., Rs. 16-17 E., Kateel River Meridian. He wrote in his report on the headwater township that the stream was twenty-five feet wide as it exited the township. Its depth ranged from six inches to two feet. "Numerous sand bars [made] the water depth within this tract . . . rather shallow," recorded Woodworth. He also noted that the lake at the creek's source was "a relatively shallow clear lake." A constriction in its center made the lake marginal for floatplane landings. In the report on the four townships farther downstream, Woodworth stated the creek was still no more than twenty-five feet wide where it passed into T. 18 N., R. 17 E., Kateel River Meridian and one to two feet deep. He stated that the creek was thirty feet wide at its mouth. In September 1979 the State Director determined that the creek was nonnavigable in the four lowest townships. 249/

A year later the BLM issued another report concerning Beaver Creek, this time in T. 18 N., R. 18 E., Kateel River Meridian. It stated that bars less than one foot below the water surface made the stream impassable for all but kayaks and light canoes. A Native allotment on the shore of Lake Minakokosa left open the possibility of some Native use of the lower creek. Still the creek's shallowness "would virtually preclude usage by commercial watercraft." This report also recommended that Beaver Creek be found nonnavigable, a finding the State Director agreed with on September 11, 1980. 250/

### Lake Minakokosa

In June 1980 Ralph S. Rhodes of BLM drafted a report for the Fairbanks District Office in connection with a State selection covering T. 18 N., R. 17 E., Kateel River Meridian in which he recommended that the lake be determined nonnavigable. He had contacted three flight services in the region, one of which had averaged six to eight charters a year to Lake Minakokosa for fishing and hunting. Otherwise he could document no use of the lake. On July 24 the State Director concurred with the recommendation. 251/ In September, though, another BLM report from the Fairbanks District addressed the lake in T. 18 N., R. 18 E., Kateel River Meridian. Because of the lake's uncertain "but not shallow" depth, it recommended that it be determined navigable. Sherman Berg of the State Office noted this inconsistency and contacted David Ruppert, the Fairbanks District Office's historian in charge of navigability reports. He agreed with Berg, that the shallowness of Beaver Creek made the lake "impracticable" as a route of travel. Consequently, when the State Director signed the navigability decision for this township on September 11, 1980, Lake Minakokosa was among the water bodies found nonnavigable. 252/

### Selby River

The BLM's Fairbanks District Office prepared a navigability recommendation on the Selby River in T. 16 N., R. 14 E., Kateel River Meridian in early September 1980. It described the water body as from ten to fifteen feet wide and one to two feet deep with a sandy bottom. The river was "choked with numerous gravel bars, rapids, and overhanging brush" and that sweepers lay across the stream. The District Office recommended, and on September 11 the State Director concurred, that the Selby River be found nonnavigable. 253/

### Lake Selby

Natives told Lieutenant George M. Stoney of this lake in the course of his 1884 exploration of the Kobuk River. Interested in charting this lake and its vicinity, he left a skin boat behind and walked with five others from the Kobuk to the lake carrying a canoe and equipment. Each person carried thirty pounds on what proved a fatiguing one-day hike to the lake, which he named. Stoney crossed the lake in the canoe making soundings. He found no bottom at eighteen fathoms. 254/

### Pah River

Apparently the Pah River just before the contact period was a route between the Kobuk and Koyukuk rivers. Lieutenant John C. Cantwell while on his 1885 exploration of the Kobuk learned from Natives that they had gone up this river and portaged a short distance to the Koyukuk drainage. (Cantwell recorded that the Native name for the river referred to its rapid current.) 255/ Anthropologist Annette M. Clark's fifty-six-year-old Indian informer in 1961 or 1962 passed along an oral tradition which coincides with Cantwell's information. According to this resident of Allakaket, her great-grandfather in the period around 1870 made summer trading trips to the upper Kobuk via a portage and the Pah River. 256/

Following a State request for the conveyance of Tps. 14-16 N., R. 13 E., Kateel River Meridian, the BLM determined that the Pah River in these townships was navigable. In a report on the area, the Fairbanks District Office noted that there was one headquarters site on the river as well as some reported Native cemetery or historic sites. The river was fifteen to twenty feet wide and shallow, in some places less than a foot deep. The channel was covered at times with brush or fallen timber and there were some boulders at its lower end. No person contacted by the District Office ever boated on the river and one person stated it was so shallow that he doubted anyone could travel the river with anything larger than a kayak or canoe. Nevertheless, the District recommended that it be determined navigable based upon "the historical record [which] shows considerable use including trading trips from the Huslia area" to the Kobuk drainage via the Pah. The State Director signed this determination on September 11, 1980. 257/

### Killak River

On August 16, 1974 Patrick Pourchot and others on an Interior Department examination of the upper Kobuk, stopped at the mouth of the Killak River. Pourchot wrote that the river was six to eight feet wide and six inches to one foot deep near its mouth. 258/

The State Director determined the Killak River to be nonnavigable in T. 17 N., R. 13 E., Kateel River Meridian on September 17, 1979. He based his decision on a report prepared the previous month at the Fairbanks District Office. This report cited the difficulty of entering the river with a riverboat because of bars on the Kobuk River. It also noted that the Killak's own shallow depth restricted Native use to the lowest

quarter to half mile. The District Office submitted another report repeating this information when addressing the need for a navigability decision in T. 16 N., R. 13 E., Kateel River Meridian. The latter conveyance included the mouth of the Killak. It recommended the river be determined nonnavigable in this township. The State Director concurred with this recommendation on September 11, 1980. 259/

#### Mauneluk River

Arthur T. Fernald of the USGS reported in 1964 that twelve years earlier he and others used a floatplane to land on Avaraart Lake. From there they made a geological reconnaissance by canoe to the mouth of Mauneluk River.

The BLM determined the extent of navigability of Mauneluk River in September 1980. On September 2nd the Fairbanks District Office submitted a report addressing State-selected lands from the river's mouth through T. 19 N., R. 13 E., Kateel River Meridian. The report stated that at its mouth the water body was sixty feet wide and that up to the tributary in Sec. 1, T. 18 N., R. 12 E., Kateel River Meridian, the Mauneluk was "wide and relatively free of obstacles." At this tributary the river narrowed considerably. In places it was only three to five feet wide with "numerous sandbars and rocks in the channel, although it is still passable to the fifth tributary (Sec. 31, T. 19 N., R. 13 E., Kateel River Meridian)." Above that it becomes "extremely shallow with gravel and sandbars, rocks, and occasional rapids." The report stated that homesites, headquarter sites, and trade and manufacturing sites dotted the river's banks up to the fifth tributary, but that only one Native allotment was above that point. The report writer, Art Conforti, further stated that two people he spoke with said it was possible to boat up to this tributary. Based upon this information the District Office recommended that the river be found navigable to the tributary in Sec. 36, T. 19 N., R. 13 E., Kateel River Meridian. Reference to Section 36 was in error as the Mauneluk does not traverse that section; apparently the intended upper limit of the determination was Sec. 31, T. 19 N., R. 13 E., Kateel River Meridian. Above that the District recommended that the river be determined nonnavigable. The State Director followed this recommendation on September 11, 1980. 260/

#### Avaraart Lake

In 1964 Arthur T. Fernald of the USGS reported that a dozen years earlier he and others landed in a floatplane on this lake and made a geological reconnaissance down Mauneluk River. Other references to this water body relate to BLM's investigation of its navigability. The Fairbanks District Office personnel traveled to the lake, probably in the summer of 1980. They saw no boats. However, the report stated there were two Native allotments on the north shore and a mineral exploration camp and Native-style tent frames on an island in the lake. The report stated the lake was two to five feet deep. The District recommended that the State Director determine Avaraart Lake nonnavigable, an action he took on September 11, 1980. 261/

#### Kolliksak Lake

In a 1969 publication, Crawford E. Fritts stated that people could access the eastern part of the Cosmos Hills by landing a floatplane on landlocked Kolliksak Lake. 262/ In April 1976 when BLM personnel met with Shungnak and Kobuk villagers to discuss easements in their selected lands, the Natives stated that fishermen regularly landed floatplanes on the lake. 263/

The State of Alaska's Department of Fish and Game and Division of Lands as well as the Bureau of Mines proposed easements around this lake when they learned it was within lands selected by the village of Kobuk. The ADF&G wanted an area for floatplane and boat tie-ups and for camping, noting that the lake was popular among those fishing for Arctic char and sheefish. The other agencies wanted a shoreline easement and also referred to the lake's recreational value. Citing the lake's popularity with fishermen, BLM's easement task force on June 23, 1977 supported a one-acre site on the southern shore of the lake including a twenty-five-foot-wide easement on the lakebed fronting the site. Moreover, the task force recommended that Kolliksak Lake be determined nonnavigable. However, discussion of the lake in regard to conveying land to the village of Kobuk ended in January 1978 when the Natives refined their land selection pattern to exclude the township encompassing the lake. 264/

#### Kolliksak River

Evidence of water travel on the Kolliksak River is not available. In 1885 Lieutenant John C. Cantwell doubtlessly referred to this stream when he described access to Kolliksak Lake. Cantwell apparently got his information from Natives. He stated that there was no direct water route to the landlocked lake, but that people could reach it by following a small tributary of the Kobuk. 265/

#### Kogoluktuk River

Some of Joseph Grinnell's companions on a gold-hunting party in 1898 took their steamboat up the Kobuk to the Kogoluktuk. In order to protect it from the Kobuk's ice, they took it six miles up the Kogoluktuk before winter set in. 266/

In September and October 1898, another group of prospectors composed of George L. Webb, Leo Chase, and George and Richard Reeves boated up the Kogoluktuk. On September 17 they took their boat from the river's mouth to the Grinnell party's steamboat. Webb commented that it was "harder pulling than ever." Here they unloaded part of their supplies. Over the next four days they dragged their supplies one and one-half miles upstream in two trips. At least on the second trip some of the men with the steamboat helped them "over the rapids." 267/

It is unclear what Webb and his partners did the last nine days of September. On October 1 and 2, they pulled their boat out of the water because ice was forming. On the 9th and 10th they took George Reeves' "little canvas boat" up from a cache (location unclear) in order to prospect farther upstream. All four started upriver, but Richard Reeves came along only to help carry the boat "about a mile and a half around the falls." From there they towed the boat up another one and one half miles to where the river was frozen. Webb's incomplete diary gave no other mention of watercraft on the Kogoluktuk. 268/

Several USGS explorers made observations of the Kogoluktuk. In 1901 Walter C. Mendenhall wrote that the Kogoluktuk was one of the Kobuk's most important northern tributaries. He stated that "the pass at its head to the Noatak is reported by the Natives to be one of the shortest and easiest leading to that river. Many rapids, however, make its navigation difficult." 269/ Philip S. Smith and Henry M. Eakin in 1910, noted that the Kogoluktuk maintained a relatively constant flow because it derived a good proportion of its water from melting snow. They added that "Kogoluktuk" meant "river with falls" in the Native language, referring to rapids and low falls through which the river tumbled on its way through the Cosmos Hills. 270/

The BLM considers the lowest six miles of the river to be navigable. Natives of both Shungnak and Kobuk selected lands including portions of the lower Kogoluktuk River. The BLM's easement staff in June 1977 considered the river nonnavigable and proposed a twenty-five-foot streamside easement along the river's banks and an easement on the riverbed in lands selected by Shungnak in T. 18 N., R. 10 E., Kateel River Meridian. The BLM stated that it served "as an access route to public lands and public waters" and that recreationists floated and fished in the Kogoluktuk. The easement would provide boat tie-ups and resting and camping areas. However, the agency rejected this easement before sending its proposed easement list to the Federal-State Land Use Planning Commission. The Commission endorsed this reversal in BLM's position in June 1979 and there was no more mention of the easement. 271/

The village of Kobuk chose lands including the Kogoluktuk River in the northern part of T. 19 N., R. 10 E. and the southwest corners of T. 18 N., R. 10 E., and T. 20 N., R. 11 E., Kateel River Meridian. The BLM proposed a one-acre site easement along the river in the former township in order to facilitate access along the river. For similar reasons the Alaska Division of Lands and the Bureau of Mines proposed a streambed and ten-foot bank easement along the river. Simultaneously with its meeting on Shungnak's easements in June 1977, BLM's easement staff approved these two proposals for Kobuk (widening the streamside easement to twenty-five feet). Also like the Shungnak easements, BLM dropped both of those proposed for Kobuk near the Kogoluktuk before submitting a list of easements to the Land Use Planning Commission. The Commission agreed that they were inappropriate. 272/

In January 1980 the BLM issued a Notice of Proposed Easement Recommendations for Kobuk. It cited the steamboat ascent six miles up the Kogoluktuk to support a stance of navigability for the Kogoluktuk "into" Sec. 33, T. 19 N., R. 10 E., Kateel River Meridian. 273/ The agency determined four months earlier that the water body was not navigable above T. 20 N., R. 11 E., Kateel River Meridian. It noted that a "series of falls and rapids located below Canyon Creek form a major obstruction to any possible commercial river usage". Above the falls lay gravel bars which "preclude river access and usage." Native boats only traveled below the falls. 274/

#### Kuikcherk River

After their 1910 travels in the Kobuk drainage, USGS geologists Philip S. Smith and Henry M. Eakin compared the southern bank tributaries of Kuikcherk, Pick, and Black rivers to the northern tributaries--Kogoluktuk, Shungnak, and Ambler rivers. They stated that the southern rivers were smaller because their drainages were smaller and because the low hills in which they head accumulate less snow than the higher mountains to the north. The geologists added that the southern tributaries were "rather sluggish" in their lower courses and that their water was in large measure derived from the tundra through which they flow. 275/

In January 1980 when it issued a Notice of Proposed Easement Recommendations for the village of Kobuk and a year later when it compiled its final easement memorandum, the Bureau of Land Management considered Kuikcherk River nonnavigable in its lower course through T. 17 N., R. 9 E. Kateel River Meridian. 276/

#### Pick River

USGS geologists Philip S. Smith and Henry M. Eakin compared the southern bank tributaries of Kuikcherk, Pick, and Black rivers to the northern tributaries--Kogoluktuk, Shungnak, and Ambler rivers. They stated that the southern rivers were smaller because their drainages were smaller and because the low hills in which they head accumulate

less snow than the higher mountains to the north. The geologists added that the southern tributaries were "rather sluggish" in their lower courses and that their water was in large measure derived from the tundra through which they flow. 277/

When addressing the need for easements in lands selected by Shungnak Natives, the Alaska Division of Lands and the Bureau of Outdoor Recreation proposed a streambed and streamside easement along Pick River and the Bureau of Land Management suggested a one-acre campsite in Sec. 9, T. 15 N., R. 9 E., Kateel River Meridian, to facilitate recreational use along the river. However, the BLM easement staff rejected both of these as unnecessary at its June 23, 1977 meeting. That same group simultaneously recommended that BLM consider the stream nonnavigable. The Federal-State Land Use Planning Commission in 1979 agreed that these easements should be dropped. The final easement statement for the village dated March 31, 1982, found the Pick to be nonnavigable. 278/

#### Tekeaksakrak Lake

In the course of conveying land to the village of Shungnak, the BLM directly addressed the navigability of Tekeaksakrak Lake. Its easement staff in June 1977 recommended the lake be found nonnavigable. This recommendation held through the State Director's easement memorandum signed March 31, 1982. However, within the next three months BLM received information indicating that the lake and its outlet provided riverboat access to several Native allotments. Consequently, on June 18, the BLM determined the lake and its outlet to be navigable. 279/

#### Shungnak River

Philip S. Smith and Henry M. Eakin, both USGS geologists, examined the Kobuk drainage in 1910. They noted that the Shungnak, like the Kogoluktuk and Ambler, maintained a relatively constant flow because it derived a good proportion of its water from melting snow. Their report also stated that "low falls and rapids" occurred on these rivers. 280/

The BLM considered the navigability of Shungnak River in the course of conveying land to the villages of Shungnak and Kobuk and to the State. The easement staff met on June 23, 1977 to consider both villages' selections, which encompassed portions of the river up through T. 20 N., R. 10 E., Kateel River Meridian. It recommended that the river be determined nonnavigable. However, it urged streambed and streamside easements follow the river through the conveyance area, noting that the Alaska Wilderness Council had cited the river as having excellent "recreational resources" and that the Shungnak "serves as a travel route providing access to public lands, waters, and resources." The staff also urged site easements in Sec. 35, T. 19 N., R. 7 E. and Sec. 21, T. 20 N., R. 9 E., Kateel River Meridian and a fifty-foot-wide access trail roughly paralleling the river to the first of these sites. Both site easements were to include a twenty-five-foot extension onto the riverbed. The sites were at least in part related to trail travel. However, by the time BLM forwarded its recommended easements to the Federal-State Land Use Planning Commission, it had dropped all but the fifty-foot easement, and the Commission urged BLM to drop it arguing that another trail served the same purpose. When signing final easement memoranda for the villages in 1981 and 1982, the State Director determined that the Shungnak was nonnavigable. 281/

The BLM twice determined the Shungnak nonnavigable in T. 21 N., R. 10 E. and T. 21 N., Rs. 10-11 E., Kateel River Meridian in 1980. The State Director first signed off on these three townships on August 5 after receiving a report from the Fairbanks District Office. The District described the river as being twenty to forty feet wide with depths commonly falling under six inches in the township under review. It referred to

"impassable rapids" in Secs. 24-25, T. 19 N., R. 7 E., Kateel River Meridian. The Fairbanks office prepared a September 2, 1980 report containing much the same information. Based upon it the State Director again determined the river nonnavigable in these townships on September 11, 1980. 282/

### Black River

Lieutenant John C. Cantwell and three men in his 1884 expedition made the first documented boat ascent of the Black River. They traveled in a umiak up the Kobuk, reaching the Black River on July 26. By then their boat had become water-soaked and Cantwell determined to travel up the Black River to obtain a replacement in a Native village. On the 27th they boated up to the village. In an article Cantwell described the Black River as "narrow and crooked, soon diminishing to a mere torrent." 283/ In his official report he wrote that his men broke camp at 7:30 and reached the village at 1 p.m. He observed that "in some places the river was fifty to seventy-five yards wide, but as we ascended the shores contracted, and when we stopped at 1 p.m. the stream had diminished in width until it was then but a roaring mountain torrent of some twenty-five feet in width." He added that they found eighteen to twenty-four feet of water for "fifteen or twenty miles, after which the depth decreased to ten to twelve feet." Cantwell stated that there was little current and they made about five miles per hour. His measure of river mileage could not have been correct. The Black River is only nineteen miles long. Since the next day they followed the villagers' advice and portaged directly from the village northeast to the Kobuk above the Black's mouth, it is unlikely that they traveled much more than thirteen miles up Black River. 284/

After their 1910 travels in the Kobuk drainage, USGS geologists Philip S. Smith and Henry M. Eakin compared the southern bank tributaries of Kuikcherk, Pick, and Black rivers to the northern tributaries--Kogoluktuk, Shungnak, and Ambler rivers. They stated that the southern rivers were smaller because their drainages were smaller and because the low hills in which they head accumulate less snow than the higher mountains to the north. The geologists added that the southern tributaries were "rather sluggish" in their lower courses and that their water was in large measure derived from the tundra through which they flow. 285/

### Ambler River

In December 1885 Lieutenant George M. Stoney of the U.S. Navy and five others sledged up the Ambler River. Stoney noted that this was not a good winter route because its rapids did not freeze. He wrote that "for many miles" the Ambler was a "rapid mountain stream, winding down in a southerly direction . . . . Where the valley narrows, the banks rise into towering perpendicular cliffs, and the waters tumble and roar over great boulders." 286/

Philip S. Smith and Henry M. Eakin, both USGS geologists, examined the Kobuk drainage in 1910. They noted that the Ambler, like the Kogoluktuk and Shungnak, maintained a relatively constant flow because it derived a good proportion of its water from melting snow. Their report also stated that "low falls and rapids" occurred on these rivers. 287/ Arthur T. Fernald of the USGS reported in 1964 that twelve years earlier he and others landed a floatplane on Lake Anirak. From there they made a geological reconnaissance by canoe to the mouth of Ambler River. 288/

In 1973 the Department of the Interior's Alaska Task Force drafted two chapters for a preliminary report concerning the Wild and Scenic River potential of the Ambler River. The chapters were based on an overflight on June 14, 1972 and an "office review of



available information." They stated that access at least to the area above T. 22 N., R. 9 E., Kateel River Meridian, was gained by light aircraft which could take advantage of many gravel bars. Riverboats could travel "in the lower reaches" and "the river offers an exceptional experience for skilled canoeists and kayakers in the upper reaches." At that time hunting and fishing were "the only major recreational activities" along the Ambler River. 289/

The BLM in 1980 determined the Ambler River navigable throughout the conveyance to the village of Ambler and up through Sec. 4, T. 22 N., R. 9 E., Kateel River Meridian in State-selected lands. A Notice of Proposed Easement Recommendations for Ambler issued in January of that year did not consider the river navigable even in its lowest portions. However, in April the Alaska State Office conducted a review of the river's navigability status. According to Keith Woodworth, a BLM natural resource specialist at Kotzebue, twenty- to twenty-four-foot flat-bottomed riverboats ascended the Ambler to the braided stretch in T. 21 N., R. 8 E., Kateel River Meridian. Also a cluster of headquarter sites, homesites, and trade and manufacturing sites was located in T. 22 N., R. 9 E., Kateel River Meridian. Claimants reportedly transported goods to these places by way of the Ambler River. One headquarter site owner offered float trips down the Ambler. Based upon the above information, Berg recommended BLM determine the Ambler navigable in the selection area which extended through T. 20 N., R. 7 E., Kateel River Meridian. The State Director's final easement memorandum adopted Berg's recommendation on June 17. 290/

The BLM's Fairbanks District Office prepared a report in August 1980 addressing State-selected lands encompassing most of the Ambler River upstream of the village selection. The District noted several homesites and headquarter sites between Kalurivik Creek and the tributaries entering the river in Sec. 4, T. 22 N., R. 9 E., Kateel River Meridian. Local sources reported riverboats ascending "as far as Cooper's cabin, three down from the north," a nineteen-foot Grumman canoe used to access the "upper cabin," and raft trips run from the headquarter site, "the second cabin down." The District's report indicated that the river was "up to four feet or more" in depth in the main channel. Based upon this information the District recommended and on September 11, 1980, the State Director determined that the Ambler be considered navigable up through T. 22 N., R. 9 E., Kateel River Meridian. 291/

#### Redstone River

Archaeologist James Louis Giddings kayaked an unstated distance up the Redstone River in the 1940s examining house pits. 292/ About two decades later Frederick C. Dean and David L. Chesemore published a wildlife study of the region in which they stated that the Redstone normally was shallow, but rose rapidly when it rained on its headwaters. 293/

The BLM in 1980 addressed the navigability of the entire Redstone River in the course of conveying land to the village of Ambler and to the State. The Notice of Proposed Easement Recommendations for the village issued in January 1980 did not consider the river navigable even near its mouth. However, in April the BLM considered the river's navigability status. Contacted by Keith Woodworth, a BLM natural resource specialist at Kotzebue, Eric Van Venen of Ambler, a commercial guide, characterized the river up to its braided area in T. 23 N., R. 6 E., Kateel River Meridian as fifty to sixty feet wide and five to six feet deep. Van Venen used a twenty-four foot freighter canoe up to the braided section and a jet boat beyond that point. There was a shallow area a mile above the river's mouth, but this could be crossed even with a loaded boat. Van Venen also indicated that Ambler villagers boat to the braided segment at higher water levels.

Based upon this information the BLM proposed to declare the Redstone navigable to Sec. 34, T. 23 N., R. 6 E., Kateel River Meridian. On June 17 the State Director determined the river navigable in the selection area, that is through T. 22 N., R. 6 E., Kateel River Meridian. 294/

The BLM considered the navigability of the rest of the Redstone River as part of its effort to convey lands to the State. The Fairbanks District Office issued a report on September 2, 1980 noting that the river was four to six feet deep below the braided section in T. 22 N., R. 6 E., Kateel River Meridian and one to three feet deep above it. The report stated that there were two braided sections; one in T. 22 N., R. 6 E. and one in T. 23 N., R. 6 E. After the lower braided portion the river is quite shallow "and navigability ends at this point." Consequently, the State Director on September 11 determined the Redstone nonnavigable above T. 22 N., R. 6 E., Kateel River Meridian. 295/

#### Jade Creek

In 1962 Steve and Phylis McCutcheon and Eugene and Delores Roguszka took a twenty-four-foot aluminum boat equipped with an outboard motor on a lift up the Kobuk River on their vacation. They carried nine hundred pounds of gear. On July 11 they entered the mouth of Jade Creek, "but found it so shallow that, with our heavily loaded boat, it was impractical to negotiate it for more than a quarter of a mile." They walked the banks of the creek looking for jade. 296/

On June 17, 1980, the BLM issued its final easement memorandum for conveying lands to the village of Ambler, Jade Creek, which was in the conveyance area, was determined nonnavigable. 297/

#### Hunt River

Prospector Joseph Grinnell recorded both Natives and whites using watercraft on the Hunt River in mid-September 1898. He and five other gold-seekers with considerable difficulty tracked an eighteen-foot, fairly-well-loaded "sealing boat" up the river for three days. How far they ascended is not clear. They met a Native hunter who took a canoe a shorter distance up the Hunt than they had. The prospectors found nothing worth mining and floated down to the Kobuk in their boat, shooting some rapids in the process. 298/

#### Salmon River

In 1975 or 1976 the mineral exploration company, WGM, conducted an examination of the upper Salmon River area in Tps. 26-27 N., Rs. 5-6 W., Kateel River Meridian. The company's report stated that "during the summer months, small boats can travel up the Salmon River to within about 10 miles of the area visited by WGM." 299/

In the 1970s the Department of the Interior examined the Salmon's Wild and Scenic River potential. An overflight occurred in 1972. 300/ The next year the Bureau of Outdoor Recreation floated the river from the southern part of T. 25 N., R. 5 W., or the northern part of T. 24 N., R. 5 W., Kateel River Meridian. There is no field report of this trip, but Bureau of Outdoor Recreation personnel stated in 1975 that after an extremely heavy rain, the Salmon River rose nearly six feet, virtually washing the rafting party down to the Kobuk. 301/

In 1975 the Bureau of Outdoor Recreation sponsored a six-man float-trip examination of the river. This became the most publicized Bureau of Outdoor Recreation river trip in

Alaska, because John McPhee was one of the participants. He later wrote about it in Coming Into the Country. However, McPhee gave few descriptions of the river. He did note that they had to do some lining, that there were sweepers, and that there was a pool about twelve feet deep at the mouth of the Kitlik. Without indicating his source of information, McPhee also stated that after summer hunting trips, Natives formerly rafted down the Salmon. 302/

John M. Kauffmann of the National Park Service and Pat Pourchot, the Bureau of Outdoor Recreation leader of the trip, wrote more revealing chronicles. Kauffmann stated that the six men helicoptered from Kiana to a point on the river five miles below the confluence of Anaktok and Sheep creeks (Pourchot calculated the distance at six miles) with a seventeen-foot aluminum canoe, a two-man folding Klepper, and two one-man Kleppers. Low water prevented them from putting in at the confluence of these two creeks and required that they do a lot of dragging, especially for the first half of their trip. Kauffmann stated that there were no difficult rapids, except one he viewed from the air in 1972 at the juncture of Anaktok and Sheep creeks. 303/

Pourchot reiterated much of what was in Kauffmann's memorandum and added a great deal of detail in his daily log of the trip. He decided on the put-in point while flying overhead, knowing that there was little water there. He wrote that "we would have had to put-in 10-15 miles further downstream for reasonably good floating and thereby would not have been able to inspect the tundra headwater country." Pourchot described the river near the long river bar on which they landed to be ten to twelve yards wide with an average depth of less than a foot. Maximum depth was one and one-half feet and there was only two to four inches over the gravelly riffles which dropped one to two feet within several yards. He stated that the current was two miles per hour in the pools.

On the 14th they hiked the surrounding terrain. Jack Hession of the Sierra Club, Bob Fedeler of the ADF&G, and McPhee walked upstream. They reported that evening that above the confluence of Anaktok and Sheep creeks, the river was "very small and rocky with very little water." Below the juncture there were "several relatively deep pools."

At 9:45 a.m., they began descending the river, making eleven miles by six that evening. Pourchot recounted that for the first four or five miles they did as much walking as floating. They lined through many shallow riffles. After lunch pools became longer, but they still "frequently" had to line riffles. The men could only float a few of the riffles. When they camped for the evening they had to repair the double Klepper and one of the single Kleppers. At their evening stop the river was ten to twelve yards wide, one to two feet deep in most pools, six to eight inches in the riffles, and six to eight feet deep in holes. The current was one to two miles per hour in the pools and three to five in the riffles.

They did not begin floating on the 16th until 11:45 a.m and traveled twelve miles before stopping at six o'clock. The men continued to have to walk some riffles, although there were pools ten to twelve feet deep and the river became easier to travel below Nikok River. McPhee and Kauffmann overturned the two-man Klepper on a sweeper, necessitating repairs for the Klepper.

On August 17 they continued to bump rocks and to have to get out of the boats at riffles, but not nearly as often as in previous days. The riffles did not drop as far as those upstream and thus they were able to float through many of them. The men passed pools which were at least fifteen feet deep. They covered thirteen miles in less than six hours and camped at the mouth of the Kitlik River. There the Salmon was fifteen yards wide, six inches to a foot deep at the riffles, two to three feet deep at smooth water, and five

to eight feet deep in pools. The current was no more than one mile per hour in the pools, two to three miles per hour in the smooth water, and four to five miles in the riffles.

They floated the rest of the way to the Kobuk in a little over five hours on the 18th. The group bumped rocks a few times and had to get out of their boats twice to line through riffles below the Kitlik River. The pools were a quarter to a half mile long, separated by riffles which continued down to the mouth. The last riffle averaged one foot deep with a two-foot maximum and was twenty yards wide. The current was six miles per hour at this riffle. Generally though, the Salmon River flowed at only two miles per hour in its last ten miles.

The Bureau of Outdoor Recreation group continued on the Kobuk to Kiana where they spoke to local residents, Guy Blankenship and a store owner identified only as Ruth. The two Kiana residents stated that there was some motorboat travel on the Salmon up to the "foothills" for hunting during higher water levels. They told Pourchot that such users would have to drag their boats over riffles. The Blankenships had landed a floatplane on the river about fifteen or twenty miles above its mouth and then floated down in canoes for fun. The two added that in the 1950s there was a geologists' camp on Sheep Creek and that on two occasions the scientists floated down the Salmon on rafts. 304/

In November 1975 the Bureau of Outdoor Recreation issued a draft analysis of the Salmon's Wild and Scenic River potential. It incorporated much of Pourchot's descriptions of the river's characteristics and added considerable other information. It stated that below Kanaktok Creek "the Salmon is extremely small with a rock strewn course over much of the 15 miles to the Sheep Creek-Anaktok Creek confluence." In this stretch it indicated that the current was five to seven miles per hour. The draft report indicated that throughout its length the river bottom generally was gravelly or stony although there were sections of exposed bedrock in its upper area.

The draft report also addressed the type of craft which could navigate the river. Canoes, rafts, and kayaks could descend the river from the juncture of Anaktok and Sheep creeks in normal to high water levels. There are "no major rapids or falls" in this area, though the report advised that shallow riffles were frequent and there were sweepers. It stated that the river was "virtually all easy Class I whitewater." The Bureau of Outdoor Recreation cautioned that in low water small craft should not put-in above the Nikok River in order to avoid lining and damage to boats.

As for riverboats, the report stated "during high water levels powerboats are occasionally taken up the Salmon River from the Kobuk. Although dragging the boats over shallow riffles is frequently required, boats can reportedly be taken up the Salmon 15-20 miles. During low water, motorized boats, except for jet-equipped boats are virtually prohibited from ascending above the mouth."

Elsewhere it contended that, "because of shallow riffles the river is not navigable upstream or downstream with boats with drafts of more than several inches." The report stated that small boats and rafts may have transported trapping and prospecting supplies on the river, but it believed this use to have been slight. Current recreational use was low; the Bureau of Outdoor Recreation believed it to be less than fifty visitor days a year, most of it sport hunting or fishing on the lower river. 305/

### Kanaktok Creek

The Bureau of Outdoor Recreation issued a draft report on the Salmon River in November 1975. By then the agency had conducted at least one aerial survey of the river. The draft report stated that Kanaktok Creek and another unnamed headwater stream were "very shallow and tumble over boulders and rocks over much of their lengths." 306/

### Unnamed Creek (mouth in Sec. 35, T. 28 N., R. 5 W., Kateel River Meridian)

The Bureau of Outdoor Recreation issued a draft report on the Salmon River in November 1975. By then the agency had conducted at least one aerial survey of the river. The draft report stated that this creek and Kanaktok Creek to which it joins to form the river were "very shallow and tumble over boulders and rocks over much of their lengths." 307/

### Kitlik River

On August 17, 1975 a Bureau of Outdoor Recreation float expedition of the Salmon River reached the mouth of Kitlik River. Pat Pourchot, the leader of the group, noted that it was the largest tributary they had yet encountered (they put-in about six miles below the confluence of Anaktok and Sheep creeks with the Salmon River). He wrote that at its mouth it was seven to eight yards wide, one foot deep, with a three- to four-mile-per-hour current. 308/

### Squirrel River

Lieutenant John C. Cantwell suggested pre-contact period Native use of the Squirrel River. In 1884 while he explored the Kobuk River, Natives told him that a one-day portage connected the Squirrel River to the Noatak. 309/

Both of the 1898 prospectors who ascended the Kobuk and left a lengthy record of their trip admitted to have accidentally gone up the Squirrel River. George L. Webb was on a steamboat which erroneously ascended the river an unstated distance on July 27. 310/ On August 28, Joseph Grinnell and his companions on the steamboat Helen took a wrong turn and steamed for twenty-four hours up the Squirrel River which he described as "as large as the Sacramento and San Joaquin combined." 311/

By 1910 miners used the lowest six or seven miles of Squirrel River and a six- or seven-mile wagon road from the river to access gold placers on Klerly Creek, a Squirrel River tributary. The Iditarod Nugget published a story in September 1910 claiming that Mr. Ballard "went up the Kobuk to Squirrel River within 6 miles of Kleary with a 70-ton loaded barge. From the head of navigation there is a good, wagon road to Kleary, six miles distance." 312/ However, USGS explorer, Philip S. Smith's 1910 observations bring into question whether a seventy-ton barge could have gone up both the Kobuk and the Squirrel. He wrote that above Kiana further travel to the mines was by "small boat" up the Squirrel River. Smith continued, stating that:

though during high water light-draft launches can go for many miles above the settlement, ordinarily the trip can be best made by dory or other boat drawing not over 6 or 8 inches of water. By this method Squirrel River is ascended for about 7 miles to a slough which makes off toward the north and east and which at the time of the visit by the Survey geologist was so shallow near its junction with Squirrel River that the dory, containing only about 500 pounds of freight, had to be partly unloaded and hauled over the shallow riffles by men lifting on each side of the boat.

Finally the slough enters a nearly round lake between one-fourth and one-half mile in diameter, which is the nearest point by water to the placer diggings.

The boating charge to this point was two cents per pound. Smith estimated that it was seven more miles over a very soft wagon road to the placers. 313/

The Alaska Road Commission corduroyed the soft wagon road in 1912. 314/ Nine years later the Road Commission provided ferry service over a slough and the Squirrel River using small boats on an endless cable. This was to facilitate access to Klery Creek from Kiana, but its exact location is not clear. 315/ Miners boated supplies and equipment up the Squirrel. For example, in the fall of 1924 miner Charles H. Hawkins brought a Star drilling machine and a tractor into the country, boating them up the Squirrel River. 316/ In 1932 Ross J. Kinney of the ARC boated up the Squirrel River and "thence through a slough and chain of lakes to a point . . . known as the Landing." Here the corduroy road, then practically useless, started. 317/ A sketch map compiled from notes by local miner Arthur M. Hansen in May 1934 indicated where this slough and lake system was. 318/ The landing from which the corduroy road began was in Sec. 32-33, T. 20 N., R. 8 W., Kateel River Meridian. The slough ran from it to connect with Squirrel River in Sec. 15, T. 19 N., R. 8 W., Kateel River Meridian. (The USGS Baird Mountains A-3 Quadrangle did not show the slough running into the Squirrel in this section, though it did indicate a dearth of vegetation where it appears the slough once flowed.) However, by 1934 miners had constructed at least two other trails to Klery Creek, both leaving the Squirrel River proper. One began just below the mouth of the slough; the other near the mouth of Central Creek. The 1955 USGS map for the area depicted the former as a trail and the latter as an unimproved road. Presumably it was the latter that Kinney referred to in 1935 when stating that miner Arch J. Tourtellotte improved a freight road and constructed "an excellent landing at the Squirrel River where lighters of 50 tons discharged their gear." 319/ Still the boats that went up the Squirrel to supply the mines were smaller than those which normally plied the Kobuk. Orah Dee Clark in the Kusko Times in May 1937, stated that the Squirrel River "is not navigable to the small boats which serve Kiana via the Kobuk, smaller boats are used on the Squirrel," with Kiana as the transshipment point. The source of Clark's information is unclear. 320/

There is one documented archaeological boat survey of the Squirrel River. In 1940 James Louis Giddings went up the river with two Natives in a motor boat. He wrote that "by late morning we were able to tie the boat up and walk a half mile through alders and willows along a shallow pond, formerly a slough of the river to the sandy bank that was Ekseavik." Giddings did not make it clear how far up the Squirrel they had traveled to reach this old village site, but Ekseavik was about two miles from the mouth of Canyon Creek and "only a few bends" up the river. 321/

In 1962 Steve and Phylis McCutcheon and Eugene and Delores Roguszka took a twenty-four-foot aluminum boat equipped with an outboard motor on a lift up the Kobuk on their vacation. They carried nine hundred pounds of gear and supplies, though by the time they reached the mouth of Squirrel River on their return trip downstream on July 25, that total probably had decreased somewhat. They took their boat three miles up Squirrel River to photograph a Native family bound for their fish camp. 322/

In 1975 the Bureau of Outdoor Recreation conducted a float trip to evaluate the Squirrel's Wild and Scenic River potential. On August 6 David Dapkus of the Bureau of Outdoor Recreation, John Blankenship of the U.S. Fish and Wildlife Service, David Mihalic of BLM, and Scott Grundy of the ADF&G helicoptered with two fifteen-foot Klepper kayaks to the upper stretches of the Squirrel River. Dapkus described their put-in point as a long gravel bar sixty-seven miles up the river, or about fifteen miles

above the water body's North Fork. This would have placed them in Sec. 27, 28, or 29, T. 22 N., R. 13 W., Kateel River Meridian. Dapkus observed from the helicopter that it would have been too shallow farther upstream for their kayaks. At the gravel bar where the helicopter landed, the river was only two inches to three feet deep, twenty feet wide with a two- to three-mile-per-hour current.

They began the trip down the Squirrel on August 7. For the first two days they spent half their time dragging the kayaks over shallow water. Dapkus described the river for the 7th as fifteen to sixty feet wide with eight-foot pools and gravel bars with only an inch of water. On the 8th the river was one hundred feet wide and one inch to ten feet deep. On both days the current was two miles per hour. They paddled and dragged eight miles the first day and ten the second, ending at a point several miles below the North Fork. Dapkus added that on August 8 they passed many dry channels in which water had flowed when he had overflowed the area in June.

On the 9th the men began to benefit from the water added by the North Fork and Omar River. Dapkus stated that although these tributaries were small, they contributed enough water to deepen most riffles to three to six inches. They kayaked sixteen miles on August 9, having had to get out and walk only a few times. The current was two or three miles per hour. On the next day they did not have to drag the kayaks at all. They made fifteen miles and the current remained the same although in places the river widened to 150 feet and there were holes of ten feet. In the last two miles traveled that day, the bottom changed from gravel to sand. On August 10 they passed two barely standing cabins on the river's south shore. These and one new cabin they saw the same day were the only man-made structures they noticed. On the 11th the river widened to two hundred feet with a two to three mile per hour current and an average depth of four feet. They traveled ten miles that day. Finally, on August 12 they paddled eight miles on the river then flowing at only one mile per hour. The river continued to have a four-foot average depth and to vary from one hundred to two hundred feet wide. That day they reached Kiana.

Dapkus gave a few observations of overall river conditions. He stated that recreationists could float this section of the river in five "fairly easy days." He observed no rapids on the river and rated all the portion of river he had traveled as class I on the whitewater scale. 323/

Blankenship and Mihalic drafted reports of the trip, though theirs were less detailed than Dapkus's. Blankenship wrote that the river was "usually too shallow in summer for power boats to operate above the Omar, thence few people go further." 324/ Mihalic added valuable information concerning current and prospective use. He stated that "there are a few Native allotments on the lower river where access is available by power boats (generally below the Omar River)." Some subsistence fishing occurred on this segment. Mihalic spoke with the Blankenship family resident at Kiana. They said that some people floated the river in canoes. The majority went up in riverboats "as far as possible towing canoes." Because of the low water level, most boats remained below the Omar. The Blankenships indicated some flew to a put-in point. Mihalic, however, anticipated that most floaters would fly in, landing on any of a number of gravel bars in the upper river valley. However, the planes would only be able to bring in kayaks and folding boats. He added that floatplanes not much larger than a Supercub could probably land in some stretches of the middle and lower river. He cautioned, though, that he was not an expert in calculating aircraft capabilities. 325/

A report issued by the Bureau of Outdoor Recreation in 1976 took virtually all its information from the memorandums of Dapkus, Blankenship, and Mihalic and from

previously cited USGS investigations. The one relevant point it added was that, though the gravel bars of the upper river may provide landings for fixed-wheel planes, no pilot had yet made use of them. 326/

In 1982 the National Park Service, having assumed the Bureau of Outdoor Recreation's responsibility for Wild and Scenic River studies, sponsored another trip down the Squirrel. James Morris of the National Park Service led the expedition consisting of Howard L. Smith of the BLM and Kim Francisco and Robert McLean of the ADF&G. They flew out of Kotzebue in a Cessna 185, intending to land on a river bar near where Dapkus's party had landed in a helicopter. However, the pilot was reluctant to land at any bar they surveyed until they reached one at the confluence of the North Fork. Fisheries biologist McLean later reported that the river just above the confluence of the North Fork was one hundred feet wide and ranged between six and twenty inches deep, though there were holes up to eight feet deep along the bank. He estimated the velocity to be 4.2 feet per second and the flow at 470 cubic feet per second. 327/ The next morning Morris observed that the river had dropped about four inches overnight. He stated that the river appeared to have dropped nearly two feet during the previous couple days and added that it continued to drop during the trip.

On August 4 the foursome floated to the mouth of Omar River. Morris indicated that the current was three miles per hour and that the depth varied from a few inches in the riffles to over six feet in the pools. Half-inch to two-inch gravel constituted the river bottom. One mile below the North Fork they passed a campsite where Morris saw a badly battered outboard motor propeller. A little below that he noted a new Native allotment. That evening three Kiana hunters traveling upriver in a fiberglass boat with an eighty-five horsepower outboard motor stopped at their campsite before continuing up the Squirrel.

Morris made only a few comments on river conditions on the rest of the trip. On August 5 they floated to the mouth of Timber Creek. There was no white water, some stretches of fast water with ripples, and other sections with little current. Except for short braided portions, the river flowed in a single channel. On the 6th they continued downstream to river mile 7. Because of only a slight current and a steady breeze, paddling became difficult. This problem continued the next day when they found that pulling the boats from the shoreline was as fast as paddling against the wind. They arrived at Kiana about noon of August 7. Morris summarized the Squirrel as providing a safe float by canoe, kayak, or raft and stated that "the lower 50 miles appears boatable by small power boat with some difficulty in frequent shallow areas." 328/

The BLM considered the Squirrel's navigability in the process of conveying land to the Natives of Kiana. In a Notice of Proposed Easement Recommendations signed September 24, 1979 the agency stated that the river was navigable from its mouth to a barge landing site in Sec. 6, T. 19 N., R. 8 W., Kateel River Meridian. In the wake of the Kandik-Nation decision, the BLM reexamined this position. According to Keith Woodworth of the Fairbanks District Office, riverboats ascended the river to Omar River and Native allotments were located along both the Squirrel and Omar rivers. In a final easement document signed March 10, 1982 the State Director thus determined the Squirrel navigable to the Omar which was above the selection area. 329/

#### Omar River

While on a 1982 National Park Service float trip down the Squirrel River, Robert F. McLean, a fishery biologist with the ADF&G, recorded observations at the mouth of Omar River. On the evening of August 4 he estimated that the river was eighty-five feet



wide with a depth ranging from six inches to three feet. Its current was 4.2 feet per second and its water flow was seven hundred cubic feet per second. 330/

### Klery Creek

The USGS's Philip S. Smith investigated the mining activity and potential of the Squirrel River tributary in the summer of 1910. He pointed to its satisfactory flow of water stating that "a crossing even on a riffle, could not be made in less than 2 1/2 feet of water, in a current of such speed that care had to be taken in keeping one's feet, shows that several thousand miner's inches are probably available during a wet season such as 1910." 331/

### SELAWIK RIVER

According to Navy Lieutenant George M. Stoney, who visited the area in the mid-1880s, Natives' travel pattern on the Selawik River was similar to theirs on the Noatak and Kobuk. When the river broke, families in skin-covered umiaks rode the high water to the coast. Returning upstream they sometimes used a towline to pull the boats. Lieutenant John C. Cantwell, who was in the area at the same time as Stoney, learned from Natives that they reached the Yukon by ascending the Selawik to near its headwaters and then descending the Koyukuk system.

Cantwell and Stoney both explored the Selawik River. On August 14, 1884, Cantwell with two Natives in a skin boat traveled from a village at the mouth of the Throat River to the Selawik. There the Selawik was six hundred to one thousand yards wide. Cantwell then descended the Selawik to Selawik Lake. He described the river in this stretch as being from twenty-four to thirty-six feet deep. 332/

Stoney with two dogsleds and three Natives explored and mapped the headwaters of the Selawik from their Kobuk River Fort Cosmos base in the winter of 1885-86. At some point he cut through the river ice and discovered it was deep enough to float his steamboat, the Explorer. In the following July he took the Explorer up the Selawik to map the lower portion of the river. He wrote that the "banks of the Selawik are as regular as canal banks. Two fathoms can be carried up to the forks where there is a five fathom hole." Beyond this point, which most likely was at the mouth of the Kugarak, the river was too shallow for the Explorer. Stoney also described three outlets to Selawik Lake: "the westernmost is the deepest, two fathoms can be carried over this bar; over the others only a few feet." 333/

Given the prospecting activity on the Kobuk, it is not surprising that gold-seekers also panned the Selawik. Miner W. Bruce, a prominent Alaskan miner, wrote in 1899 that four years earlier two men from the Yukon ascended the Koyukuk in the summer and portaged to the headwaters of the Selawik. They then prospected along that river to its mouth. Bruce does not indicate whether they boated down the river. 334/

Boats brought supplies upriver to the village of Selawik. An unidentified individual familiar with the area reported to the Alaska Indian Service in 1945 that the "Selawik is navigable for mail boats and lighterage. There would be no limit to the amount of freight that could be brought in on this river." The U.S. Army Corps of Engineers in 1953 prepared a draft report which addressed the characteristics of numerous rivers in the Alaska Northwest. It is uncertain how the Corps got its information. The Corps stated that barges with three-foot drafts could navigate two hundred miles above the village of Selawik and that there was ten feet of water up to the mouth of the Kugarak River. The report noted that the river became very tortuous about twenty-five miles above the

village. The Corps also stated that there currently was little use for barge navigation above Selawik. A 1957 Corps publication reiterated this information. 335/

Several other government studies addressed the Selawik River in the 1960s and 1970s. The University of Alaska's Arctic Environmental Information and Data Center reported in 1975 that sport fishing increased along the river in the 1950s and early 1960s as the numbers of mail planes, charter flights, float trips, and Native boat operators grew. A consultant firm in a report prepared for the Department of Commerce in 1965 noted that barging operations served the community of Selawik. And the State of Alaska's Division of Planning and Research wrote that navigation was difficult during seasonal low water. 336/

In the mid 1970s the Bureau of Outdoor Recreation considered the Wild and Scenic River potential of the Selawik River. On June 19, 1976, a helicopter transported BOR's David Dapkus, Philip Bailey of BLM, Morris LeFever of the Fish and Wildlife Service, and Ted Swem, Jr., with two-man kayaks to the confluence of Shiniliaok Creek with the Selawik. Reports by all participants are in the National Park Service files. Bailey stated that the river was easy class I on the whitewater scale. He saw no evidence of human use on the uppermost twenty-five to thirty miles and very little in the next fifty miles. Local Natives fished and hunted on the lower half of the Selawik and recreational hunters flew to it in the fall. Bailey wrote that there was little use of the river in the summer. He added that the upper river was accessible only by air, "unless a boat is pulled up river [sic] by hand." 337/

LeFever gave a better description of the trip and the river's characteristics. Near where they put in, the river was thirty to fifty feet wide "with gravel or sand bars on every curve." LeFever added that the river "curved constantly." For the first three days the current was three to four miles per hour and they averaged about twenty-six miles each day. In T. 13 N., R. 7 E., Kateel River Meridian the Selawik passed through a series of bluffs. Along one of these they met Jim Schwarber, the only person they encountered above Selawik. Schwarber had a homesite a mile downstream and was cutting logs to float down to build a cabin. "For several days" after reaching T. 13 N., R. 4 E., Kateel River Meridian the current slowed. The men located house pits at the juncture of Tagagawik River. They were surprised that they had made so little progress; LeFever concluded that the numerous meanders on the upper river had thrown off their calculations that they would only have to float 140 miles to reach Selawik. He later had cartographer Drew Morton measure their route on a 1:250,000 scale map. Morton estimated they floated 207 miles. In one more day they reached the Kugarak River, "where the current ended" and where past habitation was obvious. LeFever then wrote that during "the last four days of the trip, the now large river meandered extensively." Moreover, strong winds off Kotzebue Sound hindered progress. Approximately forty river miles above Selawik "recently used campsites" became more and more common. Some were trapping camps, while the most recently used ones showed evidence of having been fishing or waterfowl hunting sites. On June 29 they arrived at Selawik where an older man was excited to see the kayaks. He had not seen a kayak used since the 1940s. 338/

Swem's report added to and in some cases contradicted LeFever's. Among the contradictions were Swem's assertion that they had floated only 165 miles and that the current was four to seven miles per hour at the upper end of the river. Swem recorded that they began floating on June 20 and made seven miles. On the 21st they floated eighteen miles and on the next day they reached Ingruksukruk Creek, where the river "began winding . . . and continued to do so from then on." Swem did not continue his day-to-day description of their progress. He estimated that the winds on the lower river off Kotzebue Sound reached thirty-five to forty miles per hour. Wind-stirred "standing waves" reached two and one half to three feet, making paddling risky. Swem concluded

that the Selawik was not a very good float trip. The upper portion was swift and scenic, but below the Kugarak the current died, the headwinds increase, and the scenery was poor. Floating the head of the river was possible, yet expensive for an eighty-mile trip. 339/

Dapkus paid the closest attention to the day-to-day changes in the river's characteristics. On the evening of June 19 they landed a quarter mile below Shiniliak Creek. Dapkus observed that the river was six to ten inches below its normal level. It was forty feet wide and a half to two feet deep with a three- to four-mile-per-hour current and fist-size rocks on the bottom.

They began their float on the 20th. For the first three days the current remained in the three- to four-mile-per-hour range and Dapkus considered it all, and indeed the entire river traveled, as class I whitewater. On the first day they went downstream about fifteen miles to camp near an unidentified unnamed stream. The river varied between eight and thirty-six inches deep, was forty to sixty feet wide and had a gravel bottom. There were some sweepers and floating tundra masses. There were many small gravel bars, but these were too small to land a wheel plane on and the river was not large enough for float planes. The next day sweepers, tundra masses, and small boulders increased; the depth varied between four inches and five feet and the river was twenty to seventy-five feet wide. They traveled down to Kiliovilik Creek on the 21st. They met Jim Schwarber cutting logs for a cache on his homestead near Shinilikrok Creek. Dapkus recorded that on the 22nd the Selawik "receded to its normal level" and that the number of sweepers increased. The party also encountered a few boulders and some living trees which had been washed into the river at breakup. He stated that the river had flowed through "a narrow, meandering channel from the start," but that that day the bends became tighter and more frequent. Also the seventy-five-foot-wide channel began breaking into twenty- and forty-foot-wide braids. The water's depth was two to three feet.

On June 23 the current slowed from three to one mile per hour. In the morning the floaters entered the flats and about midday the rock and gravel bottom gave way to sand. They encountered fewer sweepers, tundra masses, and rocks. The river varied from fifty to 125 feet wide with one inch to six feet of water.

For the remainder of the trip the one-mile-per-hour current combined with headwinds made travel difficult even though the river was one large channel. On June 24 the river became 125 feet wide and six to ten feet deep. The winds blew up one to three-foot waves. The next day conditions changed little, except that the wind died down in the afternoon and the river widened to as much as two hundred feet. That day they passed the Tagagawik and camped in the evening at the mouth of the Kugarak. On the 26th Dapkus found the five-hundred-foot-wide river so broad and its current so slow that he had the feeling of floating on a lake. The headwinds picked up to thirty miles per hour on the 27th making paddling very arduous. The river widened to nine hundred feet. The winds continued for the next two days. On the 28th and 29th they passed Native camps and on the 29th at 5:45 p.m. they pulled into Selawik; later that evening they flew to Kotzebue where they stayed overnight before flying to Anchorage.

Dapkus concluded that they had traveled 207 miles in "ten long days of hard paddling." He wrote that they floated about twenty-five miles a day for the first three days and eighteen to twenty the remaining seven days. The lower river was large enough for floatplanes, but he noted that neither wheel planes nor floatplanes could land on the upper stretches. Dapkus did consider it possible for floatplanes to land on some of the lakes near the headwaters. 340/

The Bureau of Outdoor Recreation issued a report on the Selawik's Wild and Scenic River potential in November 1976. It stated that the river had no rapids and was class I whitewater, numerous sweepers and tundra masses being the primary hazards. The BOR report stated that the river averaged three miles per hour from its source to about Keruluk Creek; thereafter its rate slowed to a steady one mile per hour. (The USGS map spells the name of the creek, "Keruluk." Orth spells it "Kerulu.") The report added that barges traveled to Selawik, "shallow draft [sic] riverboat(s)" were able to ascend the river to the mouth of Tagagawik River, and during high and normal water periods, rafts, canoes, and kayaks could float from the headwaters. Most hunting and fishing camps were below the Kugarak, though there was a new cabin near Shinilkrok Creek and two older cabins in disrepair a few miles below Ekiek Creek. Difficulties of access made for very limited recreational use; the BOR knew of no wheeled landing sites along the river and the upper river was too small for floatplanes to land. However, small floatplanes could land on the lower river and they might be able to land on some of the small lakes bordering the upper river. 341/

The BLM has determined the lower Selawik River to be navigable. On February 10, 1982 the State Director signed a final easement memorandum declaring the river navigable through and above the selection area for the village of Selawik up to the settlement of Nillik. The BLM justified this decision by noting there was documented evidence of shallow-draft lighterage service from Selawik to Nillik. 342/

#### Throat River

In 1884 Lieutenant John C. Cantwell examined this distributary of the Selawik River. Cantwell explored Inland Lake with two Natives in a skin boat and observed the mouth of the Throat River. He traveled up it to the Selawik on August 13 and 14 and described the distributary as winding with no shoals, a depth of three to five fathoms, and a slight current. 343/

Ensign John L. Purcell, detached from the Stoney expedition, journeyed into Inland Lake with the steamer Helena ten days after Cantwell by way of Selawik Lake and Fox River. He found what he believed to be an outlet of the Selawik River into the Inland Lake. But his description makes it somewhat questionable whether it was the Throat River. He stated that he followed it for five miles in a northwesterly direction and discovered the stream shoaled to one foot near the Selawik. 344/

In the course of conveying ANCSA land to the Natives of Selawik, the BLM determined the Throat River to be navigable and tidally influenced. The agency made this determination on February 10, 1982. 345/

#### Inland Lake

Lieutenant John C. Cantwell and Ensign John L. Purcell explored this lake separately in August 1884. Cantwell traveled in a skin boat with two Natives. On the 11th they traveled through Tuklomarak Lake and Fox River to Inland Lake. He found soundings virtually everywhere on the lake to measure about six feet, except at its southeast side, where he found that there was barely enough water to float his boat. Cantwell observed tidal fluctuations of about six inches. A storm pinned the men down on the shore of the lake on the 12th and they left the next day. 346/

On August 24 Purcell with four assistants took the steam launch Helena into the lake via the same route as Cantwell. Purcell reported after two days' observation that tides raised and lowered the lake two feet. It was five feet deep at low tide and there was insufficient depth outside the channel to float the launch. 347/

In 1976 the Bureau of Outdoor Recreation examined the Selawik River for its potential as an addition to the Wild and Scenic Rivers system. It noted no improvements along that water body except that the inhabitants of Selawik about 1970 hand-dug a small ditch between the river and Inland Lake. Subsequently, natural water action during breakups had widened this channel to two hundred feet. 348/

The BLM addressed the navigability of Inland Lake in the process of conveying land to Selawik under the terms of ANCSA. On February 10, 1982, the agency determined the lake navigable. 349/

#### Fox River, Tuklomarak Lake, and Outlet of Tuklomarak Lake

Lieutenant John C. Cantwell and Ensign John L. Purcell independently explored these water bodies draining the Inland Lake in August 1884. Cantwell with two Natives in a skin boat entered the outlet of Tuklomarak Lake from Selawik Lake on the 11th. He recorded that it was seventy-five yards wide with two to three fathoms of water. He passed through Tuklomarak Lake and entered Fox River. Cantwell later described it as a "narrow creek." 350/ Purcell traveled the same route on August 24 in the steam launch Helena. He stated that the outlet had a regular width of seventy-five yards with a depth of five to eight fathoms. He noted the Fox's very winding course. 351/

The BLM determined these water bodies navigable in the course of conveying ANCSA land to Selawik. The agency took this action on February 10, 1982. In the same document BLM stated that they were tidally affected. 352/

#### UNNAMED CREEK (mouth in Sec. 1, T. 12 N., R. 13 W., Kateel River Meridian)

On May 6, 1983 the BLM determined that the unnamed creek entering Hotham Inlet in Sec. 1 of this township was navigable to its source in a lake in Sec. 12. This determination was based upon a local resident accessing a Native allotment near the lake outlet by boat. The lake itself was too marshy and shallow for boats and thus not found navigable. 353/

#### KAUK RIVER

The Arctic Environmental Information and Data Center computerized navigability project printout produced for the Bureau of Land Management equated the "Kuak River" mentioned by David Wharton in his history of the Alaskan gold rush with the Kauk. Indeed, Wharton seems to have made this connection for he described the Kuak as "not a long river" and "at the northern base of the Seward Peninsula." Wharton, using the diary of prospector Maurice Hartnett at the University of Alaska, Fairbanks, stated that on July 3, 1899 twenty-five boats of over-winter gold seekers floated down the river to the Kotzebue Sound.

However, Wharton almost certainly eroded. Hartnett may have spelt the river as Kuak. This is close phonetically to Kowak, a common late nineteenth century spelling of Kobuk. Moreover, there is abundant internal evidence in Wharton's recounting of Hartnett's experience to confirm that the prospector was on the Kobuk. A mail carrier in the winter of 1898-99 reported 769 men and 260 cabins on the river. These numbers are not out of line with those Joseph Grinnell noted in his account of prospecting on the Kobuk; they would be quite remarkable for a river about which there is no other written record of prospecting. At one point Hartnett and his friends skated downriver to the steamboat Riley. The Riley was on the Kobuk that year. Hartnett also made reference to others traveling from the Ambler and Hunt rivers, Kobuk tributaries, and from Kotzebue and Riley camps, both places Grinnell located on the Kobuk. 354/

## BUCKLAND RIVER

The first recorded boat ascent of the Buckland River occurred in 1849. In that year men of H.M.S. Herald on an exploratory mission took a whaleboat about thirty miles upstream and then proceeded another thirty miles in lighter boats. 355/

The U.S. Geological Survey's Arthur J. Collier did not visit the area in 1901, but nevertheless listed the Buckland among a number of rivers which were "navigable to some extent for small boats." 356/ Two years later Fred H. Moffit headed a survey team exploring the Fairhaven mining district located in the northeastern corner of the Seward Peninsula. His group traveled overland, but Moffit made several observations on the navigation of the Buckland River. He mentioned the Buckland along with the Inmachuk, Kugruk, and Kiwalik rivers as having "gentle gradients in their lower stretches, . . . meander[ing] widely over the lowlands near the coast, producing bars and mud flats which often embarrass even the lightest of the small boats used in freighting supplies to the mining camps."

The primary destination for supplies in the Buckland drainage was Bear Creek, where a moderate amount of mining occurred. Moffit stated that the river "because of its frequent sand bars and crooked channels, is not a practicable route." The preferred route was by pack train over forty miles of tundra from Candle. It cost twenty cents per pound and took twenty-four to twenty-six hours. However, Moffit did find that some men boated supplies up Buckland River to the mines. He cited one case in which men worked hard for sixteen days to get a boatload of supplies up the Buckland, its West Fork, and Bear Creek to Cub Creek. 357/

Paleontologist L. S. Quackenbush ascended the Buckland River in 1907 and 1908. On September 1, 1907 he and Madison Grant, of the New York Zoological Society, went up fifteen miles in "a clumsy, waterlogged canoe." They turned back when they realized that an early fall would prevent a thorough exploration. Quackenbush returned in 1908. On July 20 he and hired hand James Hoffman left Kiwalik in the latter's fishing dory towing a light canoe. They abandoned the dory eight miles up the Buckland and continued another seventy-eight miles up the river to where "the water was so low, on account of a drought, that no further progress could be made." That year's especially dry season forced them "to do a great deal of wading, and to make many otherwise unnecessary portages over shallow gravel bars." They walked on a few miles. However, since they had found few fossils and "the river was constantly falling and seemed about to dry up altogether," they returned to Eschscholtz Bay.

Quackenbush made several observations about the river and its major forks. He stated that before the road from Candle reached Bear Creek, prospectors towed their supplies "in small barges" fifty-one miles up the Buckland and then up its West Fork. Prospectors, Quackenbush reported, had asserted the main stem was navigable for two hundred miles. However, he believed the river was not more than 150 miles long and that its North and South forks converged eighty-nine miles from the sea (Quackenbush wrote the "north and middle forks," but described them as coming from the northeast and southeast. Therefore he probably referred to the North and South rather than North and Middle forks). He added that both of these forks "are of equal size and each is no doubt navigable for a few miles by canoe in a season of average rainfall." 358/

In the years before WWI the Bureau of Education established a school on the river around which the village of Buckland grew. In April 1913 the school and the seven homes of the village were located somewhere not far from the coast. An agency official considered

moving it up to timber thirty miles farther upstream. However, upon closer examination he learned that "the river is so shallow that it would be very difficult for us to get any materials up the river for erecting a school house." Instead, the Natives planned to move about five miles upstream to an area with shelter from the wind and a good supply of alders for firewood. Still, the Bureau's teachers experienced difficulty boating to the settlement. The teacher reported that the river commonly was low in the fall and that in the fall of 1915 it was particularly difficult to get government supplies upriver. 359/

In 1956 archeologist James Louis Giddings, two graduate students, and boatman Almond Downey took an undescribed boat up the river to the village of Buckland. Gidding wrote of the trip: "By the time we got as far as the first straggling trees, . . . the river had become so shallow that it seemed doubtful for a while that we could reach even Buckland village thirty miles upstream." However, "after a hard day's travel" they reached the town in the evening. 360/

In 1965 Transportation Consultants, Inc. completed a study for the U.S. Department of Commerce on Alaskan transportation. Their report stated that barges supplied villagers on the Buckland, presumably at the village of Buckland. 361/

In July 1978, Joseph F. Webb led three other BLM employees on a fisheries survey of the Buckland. They helicoptered to the confluence of the South and Middle forks on the 19th. The men then floated to the village of Buckland in two twelve-foot Avon rafts. They stopped along the route to make observations and did not reach the village until the 31st. Webb described the stream as having "long, slow-moving pools separated by relatively short riffle sections." Although the current was "relatively fast," he believed there was only one area with class II water. Webb added that "Use of the South Fork Buckland River above the South Fork-West Fork [sic] area is low to non-existent." He found evidence of hunters at this confluence and at two points further upriver. 362/

The BLM determined the Buckland River navigable in Native- and State-selected land below and through T. 5 N., R. 10 W., Kateel River Meridian. On a navigability report form, Keith Woodworth of BLM recorded in the summer of 1977 that commercial tug and barge traffic was important to the village of Buckland. South of the village the river was "shallow and rocky" and travel was limited to subsistence boat use and winter travel. The BLM issued proposed easement notices for lands near the village of Buckland on October 29, 1979 which referred to commercial tug and barge service up to the community and to "historical commercial usage" from Buckland to "New Site," an abandoned village which was stated to have been on the river's West Fork. The notices stated that this upper portion of the river "was commercially utilized with scows during periods of high water." Therefore, the notices indicated that the Buckland was navigable through the selection area, which included all of the river's course in T. 5 N., R. 10 W., Kateel River Meridian and most of its course below that township. The BLM issued a Decision for Interim Conveyance for this land on August 5, 1983 and an Interim Conveyance on September 28, 1983. 363/

The BLM made a similar determination for similar reasons in connection with State-selected land from T. 5 N., R. 10 W., Kateel River Meridian downstream. In March 1980 David O. Scott of the Fairbanks District Office prepared a report which described the river from Buckland up to the West Fork as two to twenty feet deep with a few gravel bars and a small gradient. The bars could prove a hinderance to navigation in low water, Scott wrote, but during most periods of open water the river was suitable for shallow-draft boats. After citing use up to New Site, Scott recommended the river be

found navigable to that defunct settlement. The State Director concurred with this recommendation on July 24, 1980. 364/

However, the BLM did not find the West Fork navigable in or above T. 3 N., R. 10 W., Kateel River Meridian. In a report dated August 30, 1979 Keith H. Woodworth of BLM stated that at its lower limit in the above township the river was twenty to twenty-five feet wide and narrowed to nearer fifteen feet at Bear Creek. He estimated its depth as six inches to two feet; the stream's shallowness was the only impediment it offered to boat travel. Woodworth stated that shallow-draft boats could bring supplies to New Site in Sec. 29, T. 5 N., R. 11 W., Kateel Meridian. This location is clearly wrong. Neither the Buckland nor its West Fork traverse this section. Maps compiled by the USGS show structures in Sec. 29, T. 5 N., R. 9 W., on the West Fork; possibly this was New Site. Woodworth stated that Natives abandoned this settlement, which contained a BIA school, because boats could only bring supplies to the town during high water. Woodworth added that at high water people could line or pole shallow-draft riverboats to reindeer corrals in T. 3 N., R. 11 W. and that he learned from one Native that the river's shallowness had thwarted his effort to access his Native allotment in Sec. 8, T. 2 N., R. 10 W., Kateel River Meridian by boat during spring breakup. On the basis of this report the State Director determined the West Fork nonnavigable above the township line common to T. 3 N., Rs. 9-10 W., Kateel River Meridian on September 18, 1979. 365/

#### KIWALIK RIVER

Natives used kayaks and, possibly, umiaks on the Kiwalik River before whites arrived on the Seward Peninsula. Dorothy Jean Ray in her study of the area's people quoted the Russian explorer Lavrentiy Zagoskin stating that the Eskimos of the Norton Bay area had contact with those in the vicinity of present-day Kotzebue via "the convenient portage" between the Koyuk and Kiwalik river. 366/

John Muir and Edward W. Nelson, two of the most prominent explorers of Alaska, and six others from the U.S. Revenue Steamer Corwin made the first recorded boat expedition up the Kiwalik River. On July 14, 1881 they took one of the ship's boats upriver to a point about eight miles from "the mouth of the estuary near the head of the delta." 367/

The USGS became very interested in the Seward Peninsula soon after the gold discoveries at Nome. Arthur J. Collier was the first Survey employee to address the suitability of the Kiwalik for boats. Although he did not visit the river, in 1901 he listed the Kiwalik among a number of water bodies "navigable to some extent for small boats." 368/ In 1903 Fred H. Moffit led another Survey group on an overland exploration of the northeast Seward Peninsula. He later made several observations concerning the Kiwalik. He included it along with the Inmachuk, Kugruk, and Buckland as having "gentle gradients in their lower stretches, . . . meander[ing] widely over the lowlands near the coast, producing bars and mud flats which often embarrass even the lightest of the small boats used in freighting supplies to the mining camps." Moffit wrote that "a small boat" brought coal up to Candle from ships off the coast and that those wishing to build at Candle would cut spruce trees along several streams at the head of the valley and float them down to town on the high water of the spring snow melt. 369/

In the first years of the century there was sufficient activity in Candle to support a steam-powered freighting service on the Kiwalik. Ellsworth L. West, who skippered the steamship Corwin, visited the town in this early boom period. He later recalled that, "freight and passengers went from Keewalik to Candle on a small stern-wheeler, the



Keewalik Flyer, so constructed that she could proceed on a "'heavy dew.'" Its shallow water capabilities were necessary, according to West, because "the river wasn't more than nine inches deep in places." He stated that the boat had a stationary Fairbanks engine amidship with a rope transferring power to the paddle wheel. A photograph published with West's story showed the Keewalik Flyer. It appears to have been about forty feet long. Missionary Edward James Devine also took the Flyer sometime between 1902 and 1904. He wrote soon after that the trip up the river was very slow; it took four or five hours to go only twelve miles through the "tortuous, shallow" river. 370/

In 1917 the USGS's George L. Harrington traveled in the Candle area. He stated that shallow-draft power scows took supplies from the coast to town. He also wrote that the "effects of the higher tides are sometimes noted at Candle. On the other hand, at normal or low stages of water, if a south wind is blowing, considerable difficulty may be experienced in reaching Candle by boat, for the winds may be sufficient to overcome the effects of the incoming tide." 371/

Boating up the Kiwalik may have become more difficult in the next decade. Candle and Fairhaven mining district residents petitioned the Alaska Road Commission in 1926 for a road from the village of Kiwalik on the coast to Candle complaining that the river had "become so filled and blocked with silt that it is no longer a dependable route for handling freight." The ARC's James G. Steese responded that the Commission would consider the request, but he was not optimistic it would approve. 372/

Boating supplies to Candle continued. The U.S. Coast and Geodetic Survey stated in 1926 that freight was lightered up the river from Kiwalik. Similar entries exist in the USC&GS's 1938 and 1954 editions. 373/ Mrs. Solveig K. Xavier elaborated on the shipping in her March 1945 filing of Candle's Post War Planning Survey form with the Alaska Indian Service. The Ferguson Lighterage Company barged supplies to Kiwalik. From there J. Sherman used a power-driven scow to tow barges and scows to Candle. Sherman was able to handle about seventy tons per trip. Each trip between Kiwalik and Candle took twenty-four hours depending on the tides. 374/ In 1963 the Bureau of Indian Affairs conducted a survey of some Native villages and reported that all of Candle's heavy freight came up the Kiwalik "with the tide" on small tugs and barges. 375/

The BLM addressed the navigability of the Kiwalik River in two determinations relevant to State-selected land. In August 1979 Keith H. Woodworth, a BLM natural resource specialist, reported on the river in Tps. 1-3 N., R. 15 W., Kateel River Meridian. He noted that farthest downstream in this stretch the river was six inches to two feet deep and at the mouth of Quartz Creek it was six inches to a foot deep. Woodworth added that there were numerous gravel bars and riffles in the main channel. He recommended the river be found nonnavigable in the townships. The State Director concurred with this recommendation on September 17, 1979. In March, 1980, the Fairbanks District Office addressed the Kiwalik's navigability in Tps. 4-6 N., R. 15 W., Kateel River Meridian. It stated that tides affected the river to Candle and noted J. Sherman's commercial navigation of the river up to Candle. Therefore, the District recommended BLM determine the Kiwalik navigable to Candle and nonnavigable above that town. The State Director concurred on July 30, 1980. 376/

## KUGRUK RIVER

Although it drains a relatively large area and coal was once mined along it, there are few reports referring to the Kugruk's character or boatability. The USGS's Arthur J. Collier and his 1901 mapping party did not visit the river, but he did list it along with the Goodhope, Kiwalik, and Buckland as "navigable to some extent for small boats." 377/

Two years later Fred H. Moffit's Survey group explored the region on horseback. He wrote that: "Lagoons and old abandoned channels, filled with water, but no longer connected with the main channel except in time of freshet, are frequent, so that traveling is often slow and difficult. The Kugruk is larger than the Inmachuk or the Kiwalik and at the same time much more crooked." He added that the river, like the Inmachuk, Kiwalik, and Buckland, had a gentle gradient in its lower stretches "producing bars and mudflats which often embarrass even the lightest of the small boats used in freighting supplies to the mining camps." 378/ Boat traffic doubtless was not assisted by ditching operations that tapped the river's source. In 1957 the Corps of Engineers noted that the Kugruk began in Imuruk Lake, but that the lake did not contribute its flow because miners had diverted the water to their works in the Inmachuk drainage. 379/

The BLM has addressed the Kugruk's navigability in both Native and State conveyance areas. The village of Deering and NANA selected lands encompassing the river up through T. 6 N., R. 18 W., Kateel River Meridian. Phil Bailey of BLM attended a village meeting on April 29, 1976 at which villagers indicated that the Kugruk was too shallow for any boat traffic. Keith Woodworth of the Arctic-Kobuk Resource Area later recorded his personal knowledge and that which he had obtained from Deering residents about the Kugruk on agency navigability forms. He described the river as shallow, rocky, and running in a single channel. Local residents told him that tides influenced the river up to the first set of bluffs. Shallow-draft boats could utilize the river to about this point; above they could only travel during high water. 380/

In January 1978 the Fairbanks District Office reviewed easements proposed for the Deering selection. A couple easements had been suggested which bore on the Kugruk's navigability. One was for a camping site in Sec. 27. T. 6 N., R. 18 W., Kateel River Meridian on the river's bank. The FDO objected to this proposal because it could find no evidence of past use. The District also opposed a streamside easement for the full length of the river above the limit of tidal influence because it did not believe the Kugruk to be navigable by riverboat "except during brief periods of extreme high-water." A November 5, 1979 Notice of Proposed Easement Recommendations also dropped the easements, indicating that they did not meet existing criteria, and stated that the Kugruk was nonnavigable. It added that tides affected the river up to its first bluffs in Sec. 8, T. 6 N., R. 19 W., Kateel River Meridian. 381/

On March 11, 1982 Dennis P. Daigger of the State Division of Research and Development wrote to BLM providing information to bolster the State's contention that the river was navigable. Daigger wrote that Carl Grauvogel, an ADF&G biologist at Nome, indicated that jet and prop motors regularly powered riverboats and V-bottomed boats sixteen to eighteen feet long up the Kugruk. He stated that prop-driven boats ascended the lowest ten miles; those with jet units could reach the lowest thirty to forty miles. Where riffles were encountered boaters pulled their craft through with the motors lifted. Grauvogel told Daigger that subsistence was the primary motive for traveling the river. Despite this new information, the BLM did not alter its position in final easement statements signed March 25, 1982, in a DIC issued that August, or in Interim Conveyances dated September 29, 1983. 382/

The BLM drafted two reports addressing the Kugruk's navigability above the Native selection. On August 30, 1979 Keith H. Woodworth reported on the river for a State conveyance including T. 3 N., R. 18 W., Kateel River Meridian. He wrote that at high water the previous day the river was about twenty feet wide where it crossed into T. 4 N., R. 18 W., Kateel River Meridian. He stated the river was shallow -- "less than 1/2 foot with a few pools that are approximately 2 to 3 feet deep" -- and had numerous gravel bars and resulting riffles. Woodworth, however, learned that, "During periods of very high water, residents of Deering have traveled as far as the Chicago Creek Mines

(coal) (with difficulty)." He recommended the river be determined nonnavigable, a recommendation in which the State Director concurred on September 18, 1979. In the following year the State Director also determined the river nonnavigable in T. 4 N., R. 18 W.; T. 3 N., R. 19 W.; and T. 2 N., R. 20 W., Kateel River Meridian based upon a Fairbanks District Office report. 383/

## INMACHUK RIVER

U.S. Geological Survey explorer Fred H. Moffit led an expedition in the Inmachuk River area in 1903. He stated that the valley was narrow and steep down to Hannum Creek where a series of gravel bars began. These flats at some points were over four hundred feet wide; below the Pinnell River they were in places over a quarter of a mile wide. The bars and mud flats "often embarrass even the lightest of the small boats used in freighting supplies to the mining camps." Moffit recorded that in 1903 a large portion of the miners on Hannum Creek, a tributary of the Inmachuk, brought their supplies overland by pack train or wagon from the mouth of Rex Creek. He stated that this "proved more satisfactory than that of carrying the freight to the mouth of the Hannum in small boats, since the use of horses is still necessary from that point onward and, furthermore, the shallows of the Inmachuk offer difficulties to the lightest boats." However, for the prospecting and mining camps along the Inmachuk which extended up to the Pinnell River, boats were then the best means of access. Moffit observed that, "the sides and bottom of the valley offer a poor road for foot travelers and a still worse one for horses; consequently boats are generally employed in the summer time for transporting supplies from the coast to the camps." 384/

Moffit did not describe the boats plying the Inmachuk. However, the Anchorage Museum of History and Arts has two photographs taken by a man named Nowell which show boats on the river in September 1903. One picture contains either a canoe or poling boat. Both ends are pointed; its length is indeterminate. The second photograph shows a wooden boat. Its front is pointed; its back is out of view, but the sides suggest that it too is pointed. If its front and back halves were symmetrical, it would be fifteen to twenty feet long. 385/

Reliance on boats, though, may have been short-lived. In 1907 the Alaska Road Commission took over the extant mining road up the Inmachuk. The road followed the river bars most of the way up the river. In 1908 six hundred tons of freight moved up this road; the figure was eight hundred tons for the following summer. The Road Commission carried out improvements on the road in subsequent years. 386/

The BLM addressed the navigability of much of the Inmachuk River in the course of conveying land to Deering and NANA. Phil Bailey of BLM attended a village meeting in April 1976 at which he learned that small boats could go about one mile up from the river's mouth. Keith Woodworth of BLM's Arctic-Kobuk Resource Area wrote from personal knowledge and information obtained from residents of Deering that this was a shallow, rocky, single-channel stream affected by tides for approximately two miles. He stated that people rarely used it for transportation and that use was generally restricted to periods of high water. It undoubtedly was upon this information that the Fairbanks District Office opposed a streamside easement along the river, noting that the water body was "not navigable by river boat except during short periods of extremely high-water" and the BLM's Notice of Proposed Easement Recommendations dated November 5, 1979 stated the Inmachuk was nonnavigable. The agency did not alter its position in subsequent documents, including Interim Conveyance in September 1983. 387/

## GOODHOPE RIVER

In 1900 five prospectors boated an unstated distance up the Goodhope River. They left Nome on August 6 by dory and arrived at the river's mouth without mishap. They later reported that they ascended the river "by boat 140 miles," though the Goodhope is only half that length. The men prospected as they went. They found their best prospects and spent most of their time on three creeks in the upper part of the drainage which they named Jamieson, Esperanza, and Placer. The men returned to Nome overland in November and, after resupplying and alerting friends, some quickly went back to the claims. 388/

Although Arthur J. Collier and his USGS party did not visit the Goodhope River drainage in 1901, he later stated that it, along with the Kugruk, Kiwalik, and Buckland rivers were "navigable to some extent for small boats." 389/

## NUGNUGALUKTUK RIVER

In August 1861 Otto von Kotzebue and his crew on the Rurik landed at the mouth of a river, whose description of direction of flow matched that of the Nugnugaluktuk River. They questioned a family of local Natives about the river. Through signs the Natives indicated one could paddle nine days up this river to get to the open sea. Kotzebue tried for several hours to enter the river, but failed because of shallow water. 390/

## ESPENBERG RIVER

In 1958 James Louis Giddings explored the mouth of this river for archaeological sites. He found a campsite as a base camp about one mile upriver. His Native assistant transported them and their supplies up to that point in a large, wooden-planked skiff, which when well-loaded "lay as low in the water as an outbound tanker." The boat had a thirty-five horsepower motor. 391/

## UNNAMED CREEK (mouth in Secs. 14 and 23, T. 11 N., R. 33 W., Kateel River Meridian)

When the village of Shishmaref selected T. 11 N., R. 33 W., Kateel River Meridian, the State's Division of Lands requested a twenty-five-foot-wide streamside easement paralleling the stream and an easement on the creek's bed, claiming the creek was navigable. However, BLM's Fairbanks District Office in 1977 opposed the easement as it could find no history of use of this stream. Since then the BLM has determined this stream to be nonnavigable within this township. On April 19, 1982 the agency granted Interim Conveyance for this land. 392/

## SERPENTINE RIVER

Arthur J. Collier led a USGS exploration of the northwestern portion of the Seward Peninsula in 1901. His party traveling overland visited the head of the Serpentine River drainage about September 1. Area residents told him that Charles McLennan was the first to explore this river, arriving in the area by dog team in May 1900. McLennan named the river for its tortuous course in its lower reaches. McLennan reached the hot springs near the head of the river that same year. Charles W. Mashburn, the deputy recorder of the district based at Shishmaref, told Collier that the Serpentine was navigable for small steamboats "for at least 20 miles." 393/ Collier in a separate publication referred to access to the northwest portion of the Seward Peninsula: "This region may be approached by a long overland trip up the valley of the Kougarok or by small boats up the rivers which flow into Shishmaref Inlet." He added that access was

so difficult that the cost of bringing in supplies prohibited mining any but the richest deposits. 394/ Not only was the river trip difficult, but, as Adolf Knopf, also of the USGS, observed in 1908, the Shishmaref Inlet "was only navigable by umiaks and flat-bottomed dories." 395/ The situation had not changed in the 1920s when the USGS's Edward Steidtmann and S. H. Cathcart wrote that, "freight landed at such points as Shishmaref Inlet must be lightered in shallow-draft boats from the coastwise schooners to the shore and up the tortuous stream channels of the tundra flats to solid ground, where it can be picked up by teams." 396/

Natives also boated on the Serpentine River. Edward L. Keithahn, who lived at Shishmaref in 1924 and 1925, recounted that on July 14, 1924 he accompanied villagers on their annual duck hunt up the lower Serpentine River. He described the scene: "Ahead were half a dozen kayaks side by side and equally spaced from bank to bank. Behind them came a string of oomiaks single file and midstream. Each oomiak was loaded with women and children, a few dogs and vast quantities of gear and camping material." They traveled upriver until they were near a promising lake. There the men portaged the kayaks and hunted. After that they continued upstream. They proceeded like this for three days before returning to the village. In mid September of the same year Keithahn and his wife accompanied a Native family up the river on a vacation trip. Keithahn recorded that they "chugged" up the river all day in a decked "little gasboat," yet when they camped that night they found they could still see cold storage mounds at the mouth of the river less than five air miles away. They set up tents and hunted and fished. On their third day a storm came up dropping nine inches of snow and "the river ran dry." Keithahn theorized that the northerly winds had blown so hard that the Chukchi Sea lowered somewhat. Since the Serpentine was "a tidal river well past our anchorage" and because the cold weather had curtailed the waterflow from above, they had to wait seven days for enough water to come back to the river so they could float their boat. Keithahn traveled up the Serpentine one more time in late June 1925 when Natives invited him to accompany them on a recreational trip before the mosquitoes descended on the area for the summer. It is not clear how far they went. 397/

The BLM examined the navigability of the lower Serpentine River in the course of conveying ANCSA lands to Shishmaref. The easement staff in November 1977 recommended that it be considered nonnavigable through the selection area which extended up through T. 8 N., R. 32 W., Kateel River Meridian. However, the Fairbanks District manager believed that this recommendation should only become final after a field examination. When BLM issued a Notice of Proposed Easement Recommendations on January 9, 1980 it stated that the river was navigable to the mouth of its South Fork in Sec. 6, T. 8 N., R. 32 W., Kateel River Meridian. Evidently the agency based this position on an interview on November 14, 1979 in which Z. William Barr, Executive Director of the Shishmaref Native Corporation, stated that miners had taken supplies up the river to the fork and thence used a cat train to reach Taylor. The State Director signed the final easement recommendation on June 9, 1981, indicating that the Serpentine River was navigable through the selection area and again citing Barr's testimony. 398/

The State selected T. 6 N., R. 30 W., Kateel River Meridian which included the source of Serpentine River. Based upon its physical characteristics and the lack of evidence of use, the BLM determined it nonnavigable on May 25, 1982. 399/

## **SANAGUICH RIVER**

The Alaska Division of Lands proposed a streamside easement on both banks of the Sanaguich River within lands selected under ANCSA by Shishmaref. The State contended that this water body was navigable and that local residents used it for subsistence.

However, BLM's easement task force could find no evidence of anyone using the river for navigation or recreation, and so dropped the easement from further consideration. When the State Director signed the final easement memorandum for the village selection in January 1981, he did not list the Sanaguich among navigable streams. 400/

#### ARCTIC RIVER

There is some evidence that Natives have boated on at least part of this river. Christine A. Heller and Edward M. Scott in the early 1960s learned from Shishmaref residents that their village had been located inland on the banks of Arctic River. 401/ In August 1924 Edward L. Keithahn accompanied Natives to their reindeer corral at Arctic River's estuary. A photograph which accompanied Keithahn's account of this trip showed three boats in the water. 402/

In the process of conveying land to the Native village of Shishmaref, the BLM considered the navigability of Arctic River's lower course. When it issued its Notice of Proposed Easement Recommendations on January 9, 1980, the agency did not include Arctic River among the navigable water bodies in the area. However, at a meeting with Native corporation members on September 9 of the same year, BLM officials learned that Natives used large boats up the river to Sec. 32, T. 8 N., R. 33 W., Kateel River Meridian where they maintained a reindeer corral and associated cabins. Moreover, BLM learned that Natives boated up the river to reach allotments. Consequently, the final easement memorandum signed by the State Director on January 9, 1981 determined the river navigable in T. 8 N., R. 32 W., Kateel River Meridian, the full extent of the river located in village land. 403/

The BLM determined part of the upper Arctic River to be nonnavigable in the course of conveying land to the State. On May 11, 1982 the Fairbanks District Office issued a report recommending that the Arctic River be determined nonnavigable in T. 6 N., Rs. 34-35 W., Kateel River Meridian. The District Office based its position on the river's physical characteristics and a lack of evidence of use. The State Director concurred in this recommendation on May 26th. 404/

#### GOOSE CREEK

Alaska's Division of Lands proposed a streamside and streambed easement along Goose Creek in the northern half of T. 8 N., R. 35 W., Kateel River Meridian which lay within lands selected by Shishmaref. The BLM's easement staff opposed this proposal noting that it could find no history of use of the creek. The State Director dropped the easement and determined Goose Creek nonnavigable in a final easement memorandum signed January 9, 1981. 405/

#### KUGRUPAGA RIVER

The Anchorage Museum of History and Art contains a photograph of two horses and seven men taking an open wooden boat about twelve feet long up a river. When the camera snapped the picture, two or three men stood in the water; at least one was pushing the boat. Two others rode horses which appear to have been pulling. The others sat or kneeled at the edge of the watercraft. Bulging bags filled the boat to its gunnels. A caption identified the photo as showing supplies being freighted up the Kugrupaga River to Tuttle Creek in 1913. 406/

While conveying lands selected by the State, the BLM determined that the Kugrupaga River was nonnavigable in and above T. 6 N., R. 37 W., Kateel River Meridian. The Fairbanks District Office drafted a report recommending this position, stating that there

was a lack of evidence of use and that the water body's physical characteristics were such as to make it unsuceptible of navigation. The State Director concurred with this recommendation on May 26, 1982. 407/

#### **NULUK RIVER**

In 1901 Arthur J. Collier led an overland USGS party to explore the northwestern portion of the Seward Peninsula. While there he mapped the Nuluk River drainage. In his report Collier included it among a number of rivers which were "navigable to some extent for small boats." 408/

In May 1982 the BLM's Fairbanks District Office issued a report which recommended that the Nuluk River be determined nonnavigable in all townships in and above T. 4 N., R. 38 W., Kateel River Meridian. The State had selected these townships. The District Office supported its recommendation stating that the river was physically unsuceptible to navigation and that there was no record of use. The State Director concurred with this position on May 26, 1982. 409/

#### **UPKUAROK CREEK**

The BLM determined Upkuarok Creek to be nonnavigable in May 1982 in the State-selected townships, Tps. 3-4 N., R. 39 W., Kateel River Meridian. The agency's Fairbanks District Office proposed this finding stating that neither the stream's physical condition nor its record of past use supported its navigability. The State Director signed the determination for the creek on May 26, 1982. 410/

#### **PINGUK RIVER**

Traveling overland, the USGS's Arthur J. Collier's survey party mapped the Pinguk River drainage. In his report, Collier included it among a number of rivers which were "navigable to some extent for small boats." 411/

The BLM determined the upper portion of Pinguk River nonnavigable in the course of conveying T. 2 N., Rs. 38-39 W. and T. 3 N., Rs. 38-40 W., Kateel River Meridian to the State. The Fairbanks District Office prepared a report stating that there was a lack of evidence of use and that the river was not physically susceptible to boat traffic. The State Director determined Pinguk River nonnavigable on May 25, 1982. 412/

The agency also addressed the Pinguk in connection with a selection by Diomedé Natives. At the initial stage of the ANCSA selection process it was thought that the village's land would extend to encompass part of the Pinguk. The State proposed a streamside easement along it. But the easement task force opposed it on November 21, 1977, since the only known use was for local subsistence and because "the area is neither of a highly recreational nature nor is this channel subject to navigation." 413/ Thereafter, BLM no longer considered the Pinguk's navigability because it was outside the selection.

#### **MINT RIVER**

Arthur J. Collier led USGS parties to the Mint River area in 1901 and 1903. In both cases he traveled overland. In 1901 he mapped the Mint River drainage and in his subsequent report Collier included it among a number of rivers which were "navigable to some extent for small boats." 414/

The report stemming from the 1903 examination gave more extensive information concerning travel in the Mint drainage, concentrating on access to the tin mines on Buck Creek, a tertiary tributary of the Mint flowing through Grouse Creek. Collier stated that wagons followed a road from York northward to Buck Creek. The road generally was in good shape except for a one-and-one-half-mile portion which Collier stated could easily be repaired with gravel from the Anikovik River. Access by water was also possible, but difficult. Lopp Lagoon into which the Mint flowed was not navigable by seagoing vessels and landing was difficult because of extensive shallow water. Collier hypothesized that:

For small, flat-bottomed boats, however, this lagoon is navigable, and it is possible that such boats might, but not probable that they ever will, convey tin ore from the Buck Creek mines, out through the inlet, to vessels lying offshore in the Arctic Ocean. It is reported that small boats can be brought up Mint River and Grouse Creek to within 1 mile of the mouth of Buck Creek. These streams, however, are shallow and crooked, and it is not probable that they can be used successfully for conveying ore from Buck Creek to the sea. 415/

In May 1982 the BLM's Fairbanks District Office issued a report which recommended that the Mint River be determined nonnavigable in all townships in and above T. 3 N., R. 42 W., Kateel River Meridian. The State had selected these townships. The District Office supported its recommendation stating that the river was physically unsuceptible to navigation and that there was no record of use. The State Director concurred with this position on May 26, 1982. 416/

The agency also addressed the Mint in connection with a selection by Diomedes Natives. At the initial stage of the ANCSA selection process it was thought the village's land would include the upper Mint. Therefore, the State proposed a streamside easement along it and a fifty-foot trail easement. The BLM's easement task force in November 1977 approved of the extant trail noting past use and subsistence and mining operations in the York Mountain area, but opposed the streamside easement since the only known use was for local subsistence and because "the area is neither of a highly recreational nature nor is this channel subject to navigation." 417/ Thereafter, BLM no longer considered the Mint River's navigability because it was outside the selection.

#### ANIKOVIK RIVER

A photograph relevant to the Anikovik River in the Tom J. Christensen Collection at the University of Alaska, Fairbanks, archives, shows a herd of caribou in the foreground, a dredge in the background, and an umiak being pulled by dogs up the mouth of the river. Its caption refers to "Ben Benard's gold dredge on Anikovik River" in 1916. The USGS made no mention of dredges on the river in that year. However, in 1914 and 1915 there was a dredge a half mile above the river's mouth. 418/

The village of Wales selected lands encompassing nearly all of Anikovik River as part of its ANCSA entitlements. Neither the State nor BLM ever suggested that the river was navigable; the State Director determined it to be nonnavigable in a final easement memorandum on July 28, 1980. Rather, BLM granted an easement requested by the Bureau of Mines, Alaska Division of Lands, and ADF&G for an existing trail from Bering Sea paralleling the river to its head and over a divide to mines on Goose and Buck creeks in the Mint River drainage. 419/



## KANAUGUK RIVER

The BLM considered the navigability of Kanauguk River in the process of conveying ANCSA land to Wales and Inalik. In November 1979 the BLM issued a Notice of Proposed Easement Recommendations for Wales which included the lowest few miles of the river. It stated that the Kanauguk was nonnavigable. The following July the State Director determined the river nonnavigable in the final easement memorandum. This determination did not change in an Interim Conveyance in March 1982. 420/ Similarly, the State Director determined the river nonnavigable in T. 1 N., R. 42 W., Kateel River Meridian within Inalik's selection area on July 28, 1980, maintaining this position through Interim Conveyance nearly a year later. 421/

## LOST RIVER

The U.S. Geological Survey and the Corps of Engineers have made observations on the character of Lost River. In late July 1903 the Survey's Arthur J. Collier estimated it carried one thousand miner's inches of water just below Cassiterite Creek. 422/ In 1922 Edward Steidtmann and S. H. Cathcart of the USGS observed that "Lost River is a swift-flowing perennial stream. Where confined to a narrow bed it is about 2 1/2 feet deep and 25 feet wide under average conditions, but in the vicinity of Cassiterite and Tin creeks it spreads out over flats several hundred feet wide." 423/

Using 1972 data, the Corps of Engineers estimated that the mean annual flow of the river was forty-three cubic feet per second. But there was great variation through the year; the Corps noted that due to sparse vegetation there was rapid runoff. A rainfall of only one inch could raise the river two feet. 424/

The river may not have been used for boats to travel up to the mines concentrated about nine miles above the mouth. Its valley evidently furnished a natural road. In 1908 a USGS report based on investigations conducted the previous year stated that the "valley is broad and open and furnishes a good wagon roadway." 425/

The BLM determined all of Lost River nonnavigable in the course of conveying ANCSA land to Inalik. The agency's village file provides no evidence of water travel on the river and the State Director in July 1980 determined it nonnavigable. The agency maintained this position through Interim Conveyance in July 1981. The IC reserved an easement for the existing road which paralleled the river from the coast to the Lost River mine in Sec. 22, T. 1 N., R. 41 W., Kateel River Meridian. 426/

## DON RIVER

In their 1922 USGS study of the York tin placers, Edward Steidtmann and S. H. Cathcart noted that there was a beach trail suitable for a team with a light load from Brevig Mission to York. They wrote that the Don River was easily fordable at its mouth. 427/

Brevig Mission selected lands under ANCSA including all of the Don River below the township line common to T. 1 N., Rs. 39-40 W., Kateel River Meridian. The State Division of Lands considered this water body navigable and therefore requested a bank easement along it. The Resource Associates of Alaska also proposed an easement paralleling the river to Tozer Creek. The BLM easement and navigability staff in June 1976 approved a trail along the river through the entire conveyance area and at the same time stated that it did not consider the river navigable. The final easement memorandum signed September 20, 1979 incorporated the staff's earlier findings both as to navigability and the trail. It added that the trail was extant and used primarily by

snowmobilers. The BLM issued an Interim Conveyance for this land on October 10, 1979. 428/ About seven months later the BLM determined the Don to be nonnavigable for the rest of its length within Tps. 1-2 N., R. 40 W., Kateel River Meridian in the course of conveying land to the State. The Fairbanks District Office in recommending this position cited a lack of evidence of use and the river's physical characteristics. 429/

## CALIFORNIA RIVER

In their 1922 USGS study of the York tin placers, Edward Steidtmann and S. H. Cathcart noted that there was a beach trail from Brevig Mission to York. The trail was suitable for a team with a light load. They wrote that the California River was easily fordable at its mouth. 430/

The BLM issued an Interim Conveyance On December 7, 1979 for Brevig Mission which included all of the California River up through T. 1 N., R. 38 W., Kateel River Meridian. The agency had determined the river in the conveyed land to be nonnavigable on September 20 of the same year. 431/

## AGIAPUK and American Rivers

All available evidence links water travel on these two rivers to access mines on American River via the lower thirty-five miles of the Agiapuk. Allan A. Allan recalled in his reminiscences that he and two young men rescued two others stranded on an island after a mishap floating down the river after breakup. He did not indicate the year, but a reference to cannibalism among the stranded men 432/ corresponds very loosely to reminiscences of Irving Reed who stated the crime occurred in the fall of 1900. 433/ If this incident did not occur in that year, it probably happened within the next few years.

The USGS made several mentions of boat traffic in the first two decades of the century. After leading a Survey team through the area in 1901 Arthur J. Collier wrote that the American River was "easily navigable for small boats for several miles above the mouth of Portage Creek." 434/ In a 1908 publication he wrote that small boats and canoes could navigate the American River for thirty miles; it is nearly thirty-three miles to Portage Creek. 435/ Finally, in 1918 the USGS reported the cost of transporting goods from Seattle to Budd Creek about twenty-two miles up the American River. It cost \$22.50 per ton to Teller and another \$12.50 to lighter the goods to the mouth of the Agiapuk. From there it cost \$10.00 per ton to move supplies up the Agiapuk and American rivers by flatboat. 436/

The BLM received several requests for easements along the Agiapuk River in the 1970s when it was thought that portions of the river lay within the Brevig Mission ANCSA selection. The ADF&G proposed a campsite and floatplane tie-up on the Agiapuk near the confluence of American River in Sec. 12, T. 1 S., R. 35 W., Kateel River Meridian stating that people already were using this place and that their use should not be curtailed. The BLM, Bureau of Mines, and the Alaska Division of Lands suggested trails along the Agiapuk River east of Dese Creek. However, the BLM dropped all consideration of these easements after June 1976 when its easement and navigability task force noted that all were outside the village's selection area. 437/

The BLM found both rivers nonnavigable in State-selected land. In May 1982 the Fairbanks District Office recommended that the Agiapuk be found nonnavigable in T. 1 N., Rs. 34-35 W., and the American be nonnavigable in T. 3 N., R. 33 W., Tps. 1-4 N., R. 34 W., and Tps. 2-3 N., R. 35 W., Kateel River Meridian. The District Office rested its recommendation on the rivers' physical characteristics and the lack of evidence of past use on the water bodies. The State Director concurred with this recommendation on May 26, 1982. 438/

In March 1985 the BLM determined the Agiapuk and its tributaries in T. 1 N., R. 37 W., Kateel River Meridian to be nonnavigable. In reaching this decision BLM's staff in February 1985 interviewed three men familiar with the general vicinity--David Scott, a former BLM Area Manager who had flown over this State-selected township at least twenty times; Norman Mendelook, a resident of Teller; and Elmer Seetot, a storekeeper at Brevig Mission. None of the men knew of boat use in the township and each referred to the streams of the area as shallow and rocky. Scott mentioned that there was a flurry of mining claim staking on the upper portion of Arctic Creek, a tributary which converges with the Agiapuk in the selected township, but he said that access was overland. Seetot discussed the recent history of boat use on the Agiapuk River. He stated that until the 1970s, people used twenty-four-foot flat-bottomed wooden boats on the lowest five miles of the river. They did not proceed farther because the boats did not have motors and their weight made it difficult to continue. Seetot told the BLM that in the 1970s eighteen-foot aluminum V-bottom boats with twenty-five horsepower outboard motors began traveling the river. They went up to about Igloo Creek. Ten to fifteen residents of Brevig Mission used these boats, which were capable of carrying one thousand pounds to hunt moose during high water. 439/

#### KAVIRUK RIVER

Beginning in 1905 boats brought supplies bound for the Kougarok mines up this river to Davidson's Landing. This began the shift of the transshipment point from Shelton to Davidson's Landing. The USGS's Fred H. Moffit reported that in 1905 more supplies than in previous years entered the Kougarok and that "many of the boats were taken up Mary [Kaviruk] River to the recently constructed warehouses at Davidson's landing and there unloaded. Wagons were then employed to transport it over a new trail to the upper part of the Kougarok." This trail followed the Kaviruk and Coco Creek to the Kougarok drainage. 440/ By 1918 when the USGS gave the costs of bringing freight into the Kougarok mining district, it made all calculations via Davidson's Landing. 441/ Evidently such transit continued into the 1940s. In 1953 the Corps of Engineers reported that shallow-draft barges could go up to the landing, although none had in the previous six years because of a sharp decline in mining. 442/

Virtually from the beginning of its consideration of the Marys Igloo ANCSA selection, BLM considered Marys Lake, Lake Omiaktalik, and Kaviruk River to Davidsons Landing to be navigable. The easement staff reached this conclusion when it met on June 28, 1977, noting that barges formerly ascended to the landing. A Notice of Proposed Easement Recommendations issued in January 1980 repeated the same conclusion and rationale. However, by September of the same year, when it issued its final easement memorandum, the BLM had determined that the barge route had followed a northern arm of Marys Lake rather than Kaviruk River. Therefore, this memo and the Decision for Interim Conveyance which followed within two weeks, both limited the Kaviruk's navigability to below the west section line of Sec. 20, T. 3 S., R. 32 W., Kateel River Meridian. Above that point the river was nonnavigable. 443/

#### KUZITRIN RIVER

Native boat travel on the Kuzitrin preceded the arrival of whites, but it is not as well documented as that for the Kobuk and Noatak rivers. In February 1854 William R. Hobson of H.M.S. Rattlesnake set out up the river with a dogsled headed for Kotzebue Sound in connection with the Franklin search expedition. In traveling upriver for six to eight days above a starting point near the Kuzitrin's mouth, he passed eight or nine inhabited settlements before heading north from the Kuzitrin. Anthropologist Dorothy Jean Ray in the late 1960s learned from Seward Peninsula Natives that the last of these

villages was "on the upper Kuzitrin River." It is not known if the Natives accessed these places other than in the winter. 444/ However, Ray and another anthropologist, William L. Sheppard, indicated that Natives hunted caribou in Kuzitrin Lake in the summer. Although she does not state the source of her information, Ray wrote that not only Natives of the lower Kuzitrin, but also those of King Island took caribou at the lake during the summer. 445/ For his 1983 publication, Fish River Natives told Sheppard that traditionally they and their western neighbors, presumably those in the lower Kuzitrin, jointly hunted caribou on Kuzitrin Lake in the late summer. Although neither author explicitly stated how the Natives got to the lake, Sheppard wrote that the traditional means of harvesting caribou at the lake was from kayaks. 446/

There also were conflicting reports of an inland water route utilizing the Kuzitrin and Fish river systems. Ray in The Eskimos of Bering Strait recorded that in 1821 Russian explorer Vasilii S. Khromchenko sailed into Golovin Bay where he communicated with local Natives. They told him that a five-day boat trip up the Fish River could bring them to Shishmaref Inlet. Khromchenko corrected this information in an 1824 publication, indicating that the western terminus of this route was gained via the Kuzitrin. The account of a Native named Tungan at Golovin Bay in August 1822 probably helped Khromchenko correct the confusion of Shishmaref Inlet and Imuruk Basin. Tungan told Khromchenko that he returned to Golovin Bay from King Island through a pass between the Kuzitrin and Niukluk rivers. Two other Natives had recently reached the bay by the same route. Ray hypothesizes that the portage was between the headwaters of Belt Creek and the Niukluk River. 447/

Two Americans, however, disputed the use of the route. William H. Ennis explored the region in the winter of 1865-66 as part of Western Union's efforts to construct a telegraph from Europe to North America via Siberia. He was interested in the suitability of the Kuzitrin and Niukluk for transporting supplies, including telegraph poles along the proposed line. In December 1865 he wrote his superior that, "All seem to think, that the rivers from Golovine [sic] Sound to Grantley Harbor, are not navigable, even for skin boats, and this seems to me to be true; for, were those streams navigable, the Indians would not take the route along the coast, when trading to Port Clarence, when the river travelling is so much shorter." 448/

However, he did feel that logs could be rafted up from Grantley Harbor to a portage. Here oxen could transport them through a long barren portage to the Niukluk. 449/ Walter C. Mendenhall, who reconnoitered the Norton Bay area in 1900 for the USGS, also was skeptical of the Kuzitrin-Niukluk-Fish rivers route. He wrote that, "the all-water summer route which appeared so long on maps of the region does not exist, and the portage of 9 miles is such a barrier to summer travel that during this season the trip is much more easily made by boat through Norton Sound and Bering Sea." 450/

When the world learned of the fabulously rich creeks and beaches of Nome, thousands of gold-seekers came north and many spilt over into the Kuzitrin drainage. Prospectors probed the entire basin, but the greatest activity concentrated along the Kougarok and its tributaries. Although some packed to the area from Nome, 451/ many early miners came in by boat. In 1900 the USGS's Alfred H. Brooks visited the region and he later reported on how miners reached the Kougarok district. Steamboats could proceed up to Marys Igloo. From there small boats went up to the mouth of the Kougarok where there was a small community called Checkers. From there pack trains took supplies overland. 452/ One contemporary newspaper article stated that small boats also proceeded up the Kougarok, 453/ but another article noted that at least miner Norman Brander planned to avoid small boat use for his heavy supplies. After the stern-wheeler Kotzebue unloaded his coal and lumber at Marys Igloo, he waited until winter to haul the goods to his mines. 454/

Dissatisfaction with boating on the Kuzitrin led to several alternative routes to the Kougarok mines. In 1901 a Nome newspaper pointed to a new route to Quartz Creek on the lower Kougarok. It reported that:

Parties well acquainted with the topography of the country claim that a trail can be made from a point about two miles above [Marys Igloo] to Quartz Creek, making that [creek] about ten or twelve miles from the steamer landing. At present the way of ordinary travel is by the mouth of the Kougarok and thence by trail about six miles to the mouth of Quartz [sic]. As the distance by small boat to the mouth of the Kougarok is thirty miles by the river, it would seem that the route by the way of the first mentioned trail would be preferable. 455/

The USGS's Arthur J. Collier led a party which mapped the Kuzitrin drainage in 1901. The resultant map showed Lanes Landing, later called Shelton, and a wagon road from it to the mouth of Dahl Creek on Quartz Creek. 456/ While boats doubtless landed here, it also served as an extension of an overland route from Nome. In 1906 the Seward Peninsula Railway reached the Kuzitrin opposite Shelton. 457/ The railroad built a bridge over the river some years, but the company had to keep rebuilding it. For many years a ferry provided the only means of crossing from the rail terminus to Shelton and the trail to the Kougarok. 458/

Collier's report, however, also indicated that boats carried freight on the Kuzitrin. He wrote that A. D. Nash had a warehouse at Marys Igloo from which he carried on a general freighting business on the river at least up to the mouth of the Noxapaga. At the end of the season Collier and topographer T. G. Gerdine traveled with Nash from the settlement of Noxapaga, seventeen miles up the river of the same name, to Lanes Landing. The trip occurred in late September, took about a day, and Collier estimated it covered one hundred miles. He without doubt referred to supplying Noxapaga when he wrote that after steamers transported goods to Marys Igloo, "extensive freighting is done with large flat-bottomed boats along the Kuzitrin and Noxapaga for about 100 miles." 459/

Collier also gave physical descriptions of the Kuzitrin. He stated that the lowest rapid and the limit of tidal influence was at Marys Igloo. Between Marys Igloo and the Kougarok there was a canyon with "long stretches of comparatively quiet water with small rapids between." A gravel-filled basin about twenty miles long occupied the area above the Kougarok. In this basin the Kuzitrin and its two major tributaries, the Kougarok and Noxapaga, meandered extensively. 460/

In the particularly dry year of 1908 the USGS's Fred F. Henshaw measured the daily discharge of the Kuzitrin at Lanes Landing and also made observations of shipping in the area. The averages for June, July, August, and September were 3,490; 433; 528; and 357 second-feet per day, respectively. The peak was in early June when the discharge was over 6,000 second-feet for four days in a row; by the end of September the figure was down to 250. 461/ In a separate report, he stated that miners in 1908 were shipping items into the Kougarok via Davidsons Landing on the Kaviruk rather than Lanes Landing and thus saving at least 25 percent in freight charges. 462/

The Alaska Road Commission was interested in transportation in the Kuzitrin drainage. The agency's primary responsibility was for trails to the mining areas. This was a matter of contention among various miners. The Davidsons Landing trail was most useful for those on Taylor Creek and elsewhere in the upper Kougarok area. But miners such as K. L. Graven wrote the Commission that a route from Shelton or Marys Igloo would better serve properties on the lower Kougarok. In connection with his efforts to

have the Commission extend a trail from these places, Graven wrote that the depth of water, "about 3 feet," was equal at Marys Igloo and Davidsons Landing and that the same boats could reach both. 463/

The Road Commission also provided ferry service across the Kuzitrin for those traveling over the tram line from Nome, which used the Seward Peninsula Railway's abandoned tracks. Some time prior to WWI the Territorial Road Commission established a ferry at Shelton. The local roadhouse keeper operated the ferry and indeed may have rowed people across even before aided by the Territorial Commission. But when traffic declined during the war, the roadhouse keeper abandoned the area except for the winter. The Territorial Road Commission hired Isador Fix to act as ferryman at Shelton right after breakup and just prior to freeze-up. 464/ In 1920 the Alaska Road Commission began paying Fix for this service. 465/ In the mid 1930s the ARC relocated the terminus of the tram to Bunker Hill, about six miles above Shelton. The Commission installed a scow capable of ten-ton loads at the location in 1935 and reported that it transported 85 people, 12 autos or tractors, 10 wagons, 4 sleds, and 56 tons of freight. Nevertheless, G. D. Lammars, who had tried to operate the scow, requested a boat capable of carrying one ton and a cable at Shelton, complaining that the ten-ton scow was unsuccessful. The Commission's records do not reveal what course the agency pursued. 466/

In late 1944 the Department of the Interior collected data on Alaska Native villages. William R. Benson completed a form concerning New Igloo near the mouth of Pilgrim River. He noted that the Lomen Commercial Company brought two hundred tons to the village each year with tugboats and scows. He also wrote that Natives occasionally brought mail to town from Teller in small boats and that small boats could travel up the Kuzitrin above the village. 467/

Several sources have addressed the navigability of the Kuzitrin since WWII. The U.S. Coast and Geodetic Survey in 1954 stated that shallow-draft lighters could go upriver to Shelton. 468/ In August 1966 Lutheran missionary Lee Luebke rode from Brevig Mission to Marys Igloo in a Native's sixteen-foot, home-built boat with a twenty-eight horsepower motor. Luebke characterized the lower Kuzitrin as a Native "vacation spot." He saw at least a dozen camps on the trip. Luebke wrote that some Eskimos came from Nome by the Nome-Shelton road and then boated downstream. 469/ In 1971 and 1972 Laurel L. Bland collected historic sites information in the region. Bland noted that the ruins of a barge and cable remained at Bunker Hill and that sportsmen using jet boats as well as subsistence users exploited the resources of the lower river. 470/

The village of Marys Igloo chose lands including much of the Kuzitrin below Shelton as part of its ANCSA selection. The BLM's Roland Shanks recorded information about the river's navigability while attending a village meeting in March 1977. Villagers explained that:

from an area approximately six miles up river from the mouth of the Kuzitrin the river was very shallow and very hard to navigate even in the small, light riverboats which they use in this area. They also pointed out several sloughs in the village area which dried up during the summer or only carried water during flood time. The Kuzitrin River above Mary's Igloo, they said, was very shallow and that even in a canoe or very light boat there were several places where you had to pull the boat over the shallow spots in the river.

Subsequently, the BLM cited past boat transportation to trail heads at Shelton and Brockways Bar to justify a determination of navigability to the latter place in T. 3 S.,

R. 29 W., Kateel River Meridian, above the village's selection. A Notice of Proposed Easement Recommendations dated January 9, 1980 and a final easement memorandum and a Decision for Interim Conveyance issued that September reflected this determination. 471/

The State selected T. 3 S., R. 29 W., Kateel River Meridian. On June 6, 1983 the BLM determined the Kuzitrin navigable through the rest of this township. The agency based this determination largely on the previously mentioned boat traffic up the Noxapaga River. 472/

#### Noxapaga River

In 1901 Arthur J. Collier and T. G. Gerdine of the USGS mapped the lower and western portion of the Noxapaga drainage. In late September they reached the settlement of Noxapaga from the northwest. Noxapaga was at the mouth of Turner Creek, which supported several mining operations. They then traveled to Lanes Landing on the Kuzitrin on a boat or scow as passengers of A. D. Nash. Nash had a regular freighting service between Marys Igloo and points along the Kuzitrin and Noxapaga, at least to Turner Creek. Collier later wrote that "extensive freighting is done with large flat-bottomed boats along the Kuzitrin and Noxapaga for about 100 miles." 473/

In the especially dry season of 1908 Fred F. Henshaw of the USGS took three measurements of the water available in the river above Goose Creek. On June 30 the discharge at the confluence with Goose was 126 feet per second; the figures were 67 and 71 feet per second on July 21 and September 8, respectively. 474/

Although the Alaska Road Commission's papers make no direct mention of travel on the Noxapaga, one telegram does display an appreciation of the possibility of boating on that river. In 1927 Ross J. Kinney wrote his superior on the Commission, D. H. Gillette, that boats could travel fifty-three miles above Shelton on the Kuzitrin and Noxapaga rivers. 475/

#### Kougarok River

The earliest prospectors and miners used boats on the Kougarok, though with considerable difficulty. In August 1900 the Nome Gold Digger rendered the following observations:

Louis Lane is interested in that section and is now packing in lumber with horses via the cut-off across the tundra from the mouth of the Kougrok [sic] to the mines, a distance of forty miles. The river is very shallow in many places and boating is attended with many difficulties, and mine owners find it much more expeditious to pack all heavy supplies overland. Very many prospectors who started out for the locality of the Kougrok [sic] gold fields got only as far as the mouth of the river and, learning of the difficulties they had to contend with, got 'cold feet' and returned, reporting the country 'no good.' . . . Those going up the river with small boats constantly meet with shallows where they have to don rubber boots and wade beside their boat, pulling it for considerable distances over the bars. Additional horses and mules are being sent up for packing in from the mouth of the river. 476/

A month later the Nome Daily Chronicle published a map of the Kougarok mining area which drew a trail from the mouth of the river to its North Fork via the divide between the Kougarok River and Garfield and Delome creeks. 477/ Presumably, Lane planned on using this trail.



Government geologists commented on transportation to the Kougarok mines in the middle of the first decade of the twentieth century. Alfred H. Brooks noted that miners took freight to Harris Creek, a tributary four or five miles up the North Fork, either overland from Lanes Landing on the Kuzitrin or "during high water, . . . up Kougarok River in small boats within a few miles of the camp." 478/ Arthur J. Collier stated that up to 1906 freighters towed flat-bottomed boats up the Kuzitrin and Kougarok to the mines. He added that since 1906 the Seward Peninsula Railway with its terminus at Lanes Landing and a trail from the railhead offered more direct transportation to the mines. 479/ Brooks also noted that by that time Davidson's Landing and a trail from it provided another relatively cheap means of access to the district. 480/ Neither Brooks nor Collier claimed explicitly that men no longer boated on the Kougarok. However, trail transport clearly dominated the region after, if not before, 1906. When the USGS's S. H. Cathcart addressed the question of transport into the upper Kougarok basin in 1918, he only mentioned travel via Davidson's Landing. 481/

From late June through early September 1908 the USGS took measurements of the daily water discharge of the Kougarok at its confluence with Coarse Gold Creek, a tributary flowing into the river a couple miles above the North Fork. This was a particularly dry year on the Seward Peninsula. On June 26 the discharge was 285 second-feet. The next day it dropped to 150. From then on it declined gradually to a low of only 13 for July 27 and July 28. It increased so that it averaged 32 for August, then rose into the 50s and 60s in early August until falling to 13 by August 12, the last day of the survey. 482/ A separate report included spotty observations of water flow on Taylor Creek, another Kougarok tributary, in 1907, which indicated that the frozen ground absorbed so little moisture that rains induced rapid fluctuation in water level. On July 24 the creek's flow rose from ten to 186 second-feet in two or three hours following a rain and within four days had fallen back to thirteen. 483/

The papers of the Alaska Road Commission hold a couple of pieces of correspondence relative to trails crossing the Kougarok. At least by 1920 the Road Commission furnished "a small boat on an endless rope" where the trail from Dahl Creek crossed the river on its way to Candle. 484/ This location is not well-defined, but probably was near Niagara Creek. In 1921 the Commission had a fifty- to one-hundred-foot suspension bridge over the river near the mouth of Coarse Gold Creek. 485/

Although it was outside Marys Igloo's conveyance area, BLM personnel gathered some information on the Kougarok while attending a village meeting in 1977. Roland Shanks of the agency recorded that several villagers stated that the river was not navigable. Muriel A. Tweet recounted that several years earlier some of her friends set out from Taylor to float the river, only to return the next day on foot. Low water and rocks destroyed their boat. 486/

The BLM had made navigability determinations for State lands encompassing much of the Kougarok drainage. In May 1982 the Fairbanks District Office submitted a report for the entire river and its tributaries upstream of the south township line of T. 1 S., R. 29 W., Kateel River Meridian. It determined the Kougarok and its tributaries to be nonnavigable in this area citing a lack of evidence of use and the water bodies' physical unsusceptibility to navigation. The State Director concurred on May 25, 1982. 487/ However, on June 6, 1983 the BLM determined that the Kougarok was navigable in T. 3 S., R. 29 W., Kateel River Meridian. The agency based this decision on Collier's statement that up to 1906 flat-bottomed boats ascended the Kougarok on their way to gold mines. 488/



## Pilgrim River

The USGS recorded the earliest data relevant to the Pilgrim River. In 1900 Alfred H. Brooks led a Survey party of five men in two Peterborough canoes. On July 31 they portaged from the Niukluk River to an unspecified point on the Pilgrim. They then ascended Pilgrim River to Salmon Lake which they reached August 3. Later in August they descended the river to the Kuzitrin. 489/

In 1906 and 1908 the USGS gathered water flow data on the Pilgrim River just below its source in Salmon Lake. Miners were interested in these statistics for hydraulic mining purposes and to evaluate the lake's potential as a dam site for electrical power. In 1906 John P. Samuelson read the gauge by wading at low water. At higher stages he had to resort to "float measurements," because the depth and velocity of the river prevented him from reaching mid-stream. Samuelson found that the flow diminished from 3,270 second-feet to 1,220 between May 28 and June 7. The last eight days of June the average daily discharge was 383 second-feet. This jumped to 571 in July due to heavy rains after the first week, which raised the discharge to 2,130 on the 9th. The figure dropped to 259 in August and by mid September it was in the 170s. Then rains again upped the discharge over 1,400 second-feet. 490/ Two years later the basin was dramatically drier. The first day of measurements, June 21, registered 550 second-feet, the highest water flow recorded for the season. It dropped gradually to 92 by late July, averaged 288 in August, and dropped through September ending at 97. 491/

There is substantial evidence of boat travel below Pilgrim Springs for the years immediately following WWI. At that time Father Bellarmine Lafortune had converted this former resort into a mission and orphanage. By September 24, 1918 Lafortune's garden had produced enough vegetables to justify marketing them. He and a Native took a dory-full down the river to Teller. 492/ Apparently, the mission had a powerboat. In 1919 Sister Berchmans reported she reached the mission by way of a power launch from Nome to the mouth of Pilgrim River where Lafortune met her in a boat. Malfunctioning "motors" on the boat slowed their trip to the springs. 493/ The mission also may have used the river above the springs. Laurel L. Bland, in compiling information on historic sites in the Imuruk Basin, noted that in 1919 the mission bought lumber on Iron Creek and floated it downriver to the springs. The Arctic Environmental Information and Data Center navigability contract printout of notes from Bland's report did not indicate the source of this information. 494/ In 1919 a game warden also used a motor boat up at least as far as the mission. M. O. Solberg on August 15 hired a boat with an Evinrude engine and the next day traveled up to the springs. He spent the 17th and 18th at the springs and unspecified tributaries of the Pilgrim. 495/

The BLM examined the navigability of Pilgrim River in conjunction with both Native and State selections. When Roland Shanks of the agency attended a Marys Igloo meeting in March 1977, villagers told him that the river "was unnavigable even by light boats much above New Igloo" [Sec. 23, T. 4 S., R. 32 W., Kateel River Meridian]. Nevertheless, on January 9, 1980 the BLM issued a Notice of Proposed Easement Recommendations stating that barge traffic had ascended to Pilgrim Springs and possibly as far up as the old Seward Peninsula Railroad line in Sec. 24, T. 4 S., R. 30 W., Kateel River Meridian. Based upon this, the notice stated that the Pilgrim was navigable through the selection area, that is up through Sec. 32, T. 4 S., R. 30 W., Kateel River Meridian which is a few river miles above Pilgrim Springs. The BLM maintained this rationale and decision through a final easement statement and a Decision for Interim Conveyance, both dated in September 1980. 496/

The BLM has made several determinations of nonnavigability for the Pilgrim River in and above T. 5 S., R. 30 W., Kateel River Meridian. On May 2, 1980 the BLM's Fairbanks District Office prepared a report for State-selected land in Tps. 5-6 S., R. 29 W.,

Tps. 5-7 S., R. 30 W., Tps. 6-7 S., R. 31 W., Kateel River Meridian. It described the river as swift with numerous rocks and boulders and noted that prospectors formerly descended it in canoes and small boats to reach the Kougarok mines. It gave no source for this information. The District recommended the river be considered nonnavigable. Because the State Office differed with the District's stance that Salmon Lake was navigable, a decision on the last two townships was suspended. There is no record of the State Director signing off on the other five townships. In 1982 the BLM produced two reports, each recommending the Pilgrim River and Salmon Lake to be nonnavigable in one of the two suspended townships. On May 26, 1982 the State Director concurred in separate memorandums with the recommendations for both townships. Also five months later the Assistant to the State Director for Conveyance Management signed another memorandum declaring the Pilgrim and Salmon Lake nonnavigable in the same two townships. 497/

In March 1985 the BLM determined the Pilgrim River to be navigable in T. 4 S., R. 30 W., Kateel River Meridian. The agency based this determination upon past work connected with the Mary's Igloo selection and an earlier draft of this regional report and upon interviews conducted in February 1985 with Boyce Bush, a Fairbanks District Office realty specialist, and Fred DeCicco of Alaska's Department of Fish and Game. Bush reported that people regularly took twenty-foot boats with outboard motors between the highway in Sec. 24, T. 4 S., R. 30 W., Kateel River Meridian and Pilgrim Springs. He believed that such boating was possible throughout the open-water season. DeCicco had used a sixteen-foot boat with a jet unit on the segment of the river in the township above the highway bridge. He confirmed Bush's statement that boats of a variety of sizes used the river below the highway and added that they also went upriver. DeCicco indicated that the river's depth was one to twelve feet in the selection and believed that eighteen-to twenty-four-foot riverboats with outboard motors could travel throughout. 498/

#### Grand Central River

At the same time it examined the Pilgrim River below Salmon Lake, the USGS studied Grand Central River, the primary tributary of that lake. Based on measurements employees of the Wild Goose Mining and Trading Company obtained at the confluence of its North and West forks from July to September, 1906, the river's average velocity was 1.2 second-feet and it was two feet deep and fifty feet wide. The USGS report indicated that below Nugget Creek the river was still fifty feet wide, one to two feet deep and had a velocity of about two second-feet. In terms of daily discharge the averages below the forks was 144, 85.2, and 62.0 second-feet, respectively, for July, August, and September. 499/ In 1908 the figures for the same months were 62.7, 123, and 52.6. In that year the USGS took similar measurements for the West Fork at its mouth which indicated average daily discharges of 39.2, 69.8, and 30.2 second-feet for the same three summer months. 500/

The BLM addressed the navigability of Grand Central River in T. 7 S., R. 32 W., Kateel River Meridian in the course of conveying that township to the State. In a report dated May 1, 1982 the Fairbanks District Office recommended that the BLM find the water body nonnavigable because of its physical character and a lack of evidence of use. The State Director concurred with this recommendation on May 25. 501/

#### Iron Creek

The Alaska Road Commission maintained a tram line on the abandoned Seward Peninsula Railway trackage. By 1921 the bridge across Iron Creek just above its confluence with the Pilgrim River had collapsed and the ARC had replaced it with one or more "small scows or flat boats." 502/

## COBBLESTONE RIVER

Laurel L. Bland, who composed a paper dealing with the historic sites of the Imuruk Basin in 1971 and 1972, made several observations about this river. The paper stated that the river was "broad and shallow with a sandy bottom . . . and sustains a good volume year round." It added that the river provided safe moorage, presumably for those traveling the southern shore of Imuruk Basin. Although Bland spoke with local Natives, the source of the information on Cobblestone River is not clear from the Arctic Environmental Information and Data Center computerized research note of this paper. 503/

## BLUESTONE RIVER

During the 1900 rush to newly-found gold on the Bluestone River, miners used boats up the river as well as a trail from Teller and Bering, a now long-abandoned mining community five miles south of Teller, to reach the placers. The USGS's Alfred H. Brooks after touring Seward Peninsula gold mining regions in 1900 stated that, "Lumber is usually brought up the Bluestone by small boats, which in good water can reach the mouth of the canyon, and is thence transported by horses to the diggings." That same year the Nome News reported that, "Small boats" could ascend to within "three or four miles" of Gold Run. 504/

In 1905 Leigh H. French, a miner in the area in 1900, published an account of his experiences stating that small boats could travel up the Bluestone to within four miles of Gold Run. 505/ Gold Run and the Right Fork Bluestone converge to form the main river in an area just above what appears on USGS maps to be a canyon. Boat traffic, however, may have been short-lived. In 1906 the USGS reported that a wagon road provided access from Teller to Sullivan, the principal settlement on the Bluestone. It did not mention water transportation. 506/

In the process of conveying ANCSA land to Teller, the BLM addressed the navigability of Bluestone River and the need for easements along the river. Roland Shanks of BLM attended a meeting of villagers in March 1977. The villagers told him that the Bluestone was navigable by boat only at extreme high water and then not very far up from its mouth. During normal water levels they anticipated that it would be hard to get even a canoe or raft down the river. Shanks also prepared a staff easement report in which he commented unfavorably on a State Division of Lands streamside easement along the Bluestone. In 1976 he visited the stream's mouth and where the Nome-Teller road crossed it. He stated that the river was navigable to about a half mile above its mouth where "you hit a very shallow area." Shanks added that no area residents boated up the river; rather several villagers told him "that the route of the Bluestone River was a very good place to walk during the summer and that fish were found in several of the deep ponds because they are separated by sections of the river which were extremely shallow." Doubtless based heavily upon Shanks input, the easement task force on June 23, 1977 rejected the proposed streamside easement as unwarranted due to its lack of recreational importance and recommended that the Bluestone be considered nonnavigable. 507/

The BLM did not alter its stance on the easement through the rest of the conveyance process or its position on the Bluestone's navigability. Following the Kandik-Nation decision Sherman F. Berg in February 1980 prepared a brief review of BLM's navigability position concerning Teller-selected lands. He did not recommend any changes, nor did C. M. Brown also of the BLM's navigability section, who apparently added his comments to Berg's memo the same day as Berg prepared the memo. Brown, however, noted that in the early 1900s prospectors used small boats on the Bluestone to within four miles of

Gold Run. He maintained that this use was relatively rare and did not justify a finding of navigability. The BLM maintained its nonnavigability stance for the Bluestone on a final easement memorandum and a DIC issued in September 1980. In October the State disputed this determination, filing an appeal with the Alaska Native Claims Appeal Board. However, in January 1982 the BLM did not include the bed of the Bluestone in its Interim Conveyance to Teller of Tps. 3-4 S., R. 36 W., and T. 4 S., R. 37 W., Kateel River Meridian and the State dropped its appeal. 508/ Therefore, BLM records indicate that although the federal government determined the Bluestone nonnavigable, it did not convey it to the Native claimants.

#### TISUK RIVER

In 1907 the Alaska Road Commission indicated Tisuk River was a wide and deep stream. To facilitate travel along the coast the ARC installed a ferry across the river's mouth. 509/

In the course of conveying ANCSA lands to King Island the BLM considered the navigability of the Tisuk River and an easement on the river's bed. In 1977 the BLM's easement task force opposed the easement for lack of information concerning use of the river and on January 9, 1980 the BLM rejected it in a Notice of Proposed Easement Recommendations stating that it did not meet public easement regulations issued November 27, 1978. There was no further consideration of this easement.

Herbert Brownell, Jr., a realty specialist with the Arctic-Kobuk Resource area, attended a village easement meeting on February 16, 1977 at which he learned that navigation was doubtful more than a "short" distance above the Tisuk's mouth. He recorded on a BLM navigability information form that shallow-draft and flat-bottom boats could navigate only about six hundred yards of the river. A Notice of Proposed Easement Recommendations dated January 9, 1980 reiterated this information and added that because there was no evidence of "travel, trade and commerce" on the Tisuk, that the river was nonnavigable. The final easement statement and a DIC issued that September maintained the same position, though they stated that the river was tidally influenced to the east section line of Sec. 8, T. 7 S., R. 38 W., Kateel River Meridian. The State disputed the nonnavigable finding and on June 3, 1981 ANCAB ordered BLM to segregate the bed of the river from the conveyance so that undisputed lands might be conveyed. The BLM did so in Interim Conveyances it issued December 18, 1981 to the King Island and Bering Straits Native corporations. In 1983 the State dropped its appeal. 510/ Thus the record indicates the BLM did not convey the land under the Tisuk to its Native claimants, though the agency did find the river nonnavigable.

#### FEATHER RIVER

In the course of conveying ANCSA lands to King Island the BLM considered the navigability of the Feather River and an easement on the river's bed. In 1977 the BLM's easement task force opposed the easement for lack of information concerning use of the river and on January 9, 1980 BLM rejected it in a Notice of Proposed Easement Recommendations stating that it did not meet public easement regulations issued November 27, 1978. There was no further consideration of this easement.

Herbert Brownell, Jr., a realty specialist with the Arctic-Kobuk Resource area, attended a village easement meeting on February 16, 1977 at which he learned that navigation was doubtful more than a "short" distance above the mouth of Feather River. He recorded on a BLM navigability information form that shallow-draft and flat-bottom boats could navigate only about six hundred yards of the river. A Notice of Proposed Easement Recommendations dated January 9, 1980 reiterated this information and added that

because there was no evidence of "travel, trade and commerce" on the Feather, that the river was nonnavigable. The final easement statement and a DIC issued that September maintained the same position though they stated that the river was tidally influenced to the east section line of Sec. 8, T. 7 S., R. 38 W., Kateel River Meridian. The State disputed the nonnavigable finding and on June 3, 1981 ANCAB ordered BLM to segregate the bed of the river from the conveyance so that undisputed lands might be conveyed. The BLM did so in Interim Conveyances it issued December 18, 1981 to the King Island and Bering Straits Native corporations. In 1983 the State dropped its appeal. 511/ Therefore, the bed of the Feather River apparently was not conveyed to its Native claimants, although the BLM considered it nonnavigable.

## SINUK RIVER

The U.S. Coast and Geodetic Survey commented on the Sinuk River over many years. In 1904 the agency noted there were shifting bars at the river's mouth, but that "there is generally water enough . . . to permit light draft river steamers to enter." 512/ The USC&GS indicated in 1926 and 1938 that steamers with four-foot drafts could enter the river; in 1954 the USC&GS modified the earlier statements, claiming water only sufficient for steamers with drafts of three feet. 513/

In 1906 the USGS took sporadic water measurements on the upper Sinuk River. Near its head at an elevation of 770 feet the Survey made five measurements between June 27 and August 10 which averaged a discharge of thirty second-feet per day. 514/

The Alaska Road Commission installed a ferry in 1910 at the mouth of Sinuk River to aid travel along the coastal trail from Nome to Teller. Here the river was 150 feet wide. In 1914 the ARC replaced the older ferry with a scow 3.5 x 10 x 28 feet. 515/ The Commission maintained a ferry system capable of taking wagons across the river at least until 1935. 516/

The BLM considered easements alongside the Sinuk River and the water body's navigability in the course of conveying T. 10 S., R. 38 W., Kateel River Meridian to the King Island Native Corporation and the Bering Straits Native Corporation. Herbert Brownell, Jr. of the agency's Arctic-Kobuk Resource Area, after attending a village meeting on February 16, 1977, reported that boating on the Sinuk "seems to have taken place at least five miles upstream from the mouth." On June 13 he filled out a "Physical Data" navigability form on the river stating that the river "is navigable for shallow draft and flat bottomed boats for only about 4 miles." Within two weeks BLM's easement staff convened and recommended that the Sinuk be considered nonnavigable and that an easement be placed on its bed and banks. The agency justified the easement noting that the stream was a "highly significant recreational river." However, BLM reversed its stance on the easement in a January 9, 1980 Notice of Proposed Easement Recommendations, indicating that it did not meet public easement regulations issued November 27, 1978. The final easement statement and the Decision for Interim Conveyance, both signed in September 1980, dropped this easement, determined the Sinuk nonnavigable, and stated that the river was tidally influenced to the north section line of Sec. 26, T. 10 S., R. 38 W., Kateel River Meridian. The State promptly protested the nonnavigability finding to ANCAB which in 1981 ordered BLM to segregate the river bottom from the selection so that the rest of the conveyance could proceed. This BLM did in a December 18, 1981 Interim Conveyance. In 1983 the BLM, State, and ANCAB agreed to drop the case. 517/ Thus the bed of the Sinuk appears not to have been conveyed despite BLM's nonnavigability finding.

The BLM has also addressed the Sinuk River above the King Island selection. In 1982 the agency determined the river nonnavigable in State-selected T. 7 S., R. 33 W., and T. 8 S., Rs. 34-35 W., Kateel River Meridian based on a lack of evidence of past use and physical unsusceptibility. 518/ The State Director also declared the river nonnavigable in T. 9 S., R. 36 W., Kateel River Meridian within the Nome village selection on the last day of 1981. However, the BLM's easement staff in 1977 had approved a streamside and streambed easement and a site easement at the Nome-Teller road crossing which included part of the riverbed, noting the Sinuk's popularity among fishermen and that floaters also used it. The BLM rejected these easements in May 1979 because of their recreational basis. 519/

#### CRIPPLE CREEK

The USGS's Frank C. Schrader, Alfred H. Brooks, and D. C. Witherspoon visited the newly-found gold district surrounding Nome in October 1899. One or more of these men traveled to and mapped the Cripple Creek drainage. Their subsequent report included it along with the Snake, Nome, Penny, Solomon, and Bonanza rivers as a water body with a "generally rather swift" current and up which "small boats" could proceed "8 to 10 miles" to the placer fields. 520/ They added that, "In the Nome region, along the coast, waterways, and streams of sufficient size, travel and transportation are principally by small boats and canoes. Across the country there are as yet but few definite and well-marked trails." 521/

The longest and most consistently documented boat use on Cripple Creek occurred at its mouth to transport those traveling the coastal Nome to Teller trail in the summer. In 1916 over one hundred residents of the Nome area petitioned the Alaska Road Commission for a bridge over the river at its mouth asserting that, "The miners have no way of getting their supplies across Cripple River [sic], and it does not only work a hardship on them, but it is extremely dangerous for anyone to cross the river without a foot bridge, during the open season." 522/ A. Polet, the chairman of the Nome-Seward Peninsula Chamber of Commerce's Board of Directors, soon after wrote backing a foot bridge over the river. He stated that there was no ferry there and that "the river is deep enough and swift enough to be impassable [sic] for foot travellers nearly all summer." 523/

At least by 1920 the Road Commission had installed a free ferry service composed of a boat on an endless cable where the trail met the river. An ARC district officer reported in 1921 that the cable was four hundred feet long. It was attached to a whale boat. 524/ In 1935 the Commission still maintained a rowboat at the crossing. That year 262 people took the boat across the river. 525/

The BLM has addressed the navigability of Cripple Creek in Tps. 9-11 S., R. 36 W. and most of its course in T. 9 S., R. 35 W., Kateel River Meridian while processing Nome's ANCSA conveyance. An undated navigability report stated that shallow-draft boats were used in the area and that tidal influence extended about a half mile upstream. At no stage in its work did BLM evidence any inclination to determine the creek navigable; the State Director on the last day of 1981 declared the river nonnavigable, but stated that tidal influence extended to the north section line of Sec. 12, T. 11 S., R. 36 W., Kateel River Meridian. 526/

#### PENNY RIVER

Frank C. Schrader, Alfred H. Brooks, and D. C. Witherspoon of the USGS visited the newly-found gold district surrounding Nome in October 1899. One or more of these men

traveled to and mapped the Penny River drainage. Their subsequent report included it along with the Snake, Nome, Solomon, and Bonanza rivers and Cripple Creek as a water body with a "generally rather swift" current and up which "small boats" could proceed "8 to 10 miles" to the placer fields. 527/ They added that, "In the Nome region, along the coast, waterways, and streams of sufficient size, travel and transportation are principally by small boats and canoes. Across the country there are as yet but few definite and well-marked trails." 528/

Boat travel may not have lasted long on the Penny River. The Alaska Road Commission's Wilds P. Richardson in 1905 traveled twelve miles up the river in a wagon following the bars and frequently crossed the stream. 529/ The Commission's report of 1907 stated that the first safe ford to cross the river was a quarter mile above the mouth. 530/

In the summer of 1907 the USGS studied the water supply available from the Penny River at the Sutton ditch intake, about a half mile above Willow Creek. Measured in second-feet the lowest daily discharge from July through September was 33 on August 15; the highest was 181 on July 7. The monthly averages for July, August, and September were 79, 59, and 71 second-feet, respectively. 531/

The U.S. Coast and Geodetic Survey made brief mentions of the river in its reports. Its 1926 and 1938 reports stated that, as with the Sinuk, Snake, and Nome rivers, there were shifting bars at the mouth of the Penny, but that there was sufficient water at the mouths of these rivers to permit steamers with four-foot drafts to enter. A 1954 report altered the previous statements by changing the maximum draft to three feet. 532/

Penny River below Sec. 10, T. 10 S., R. 35 W., Kateel River Meridian lies within lands selected by Nome under ANCSA. In an undated and unsigned report the BLM's Fairbanks District Office noted that people used shallow-draft boats in the area and that tidal influence probably extended only a quarter of a mile above the mouth. The BLM's records hold no evidence that the agency considered declaring the Penny navigable. On December 31, 1981 the State Director declared it nonnavigable. A Decision for Interim Conveyance dated September 30, 1982 reflected this decision. 533/

## SNAKE RIVER

In October 1899 as the rush to Nome was just beginning, Frank C. Schrader, Alfred H. Brooks, and D. C. Witherspoon of the USGS came to the area. They found that the Snake River along with the Nome, Penny, Solomon, and Bonanza rivers and Cripple Creek had a "generally rather swift" current. "Small boats" could proceed "8 to 10 miles" up these streams to the placer fields. 534/ They added that, "In the Nome region, along the coast, waterways, and streams of sufficient size, travel and transportation are principally by small boats and canoes. Across the country there are as yet but few definite and well-marked trails". 535/

Many of the thousands of turn-of-the-century gold-rushers to Nome mentioned the Snake River. Some referred to limited upriver travel. Carl Rydell found at the beginning of the 1899 mining season that the river was navigable only for the smallest stern-wheel steamers. He did not indicate how far these types of vessels could ascend. 536/ Joseph Grinnell was at Nome in July and August 1899. On July 30 after mentioning a small steam launch, he noted that the river was not navigable "except after heavy rains." Two weeks later he wrote that, "several steamers have gotten over the bar and are in the mouth of Snake River." 537/ Another turn-of-the-century gold-rusher, Eugene McElwaine, claimed in his The Truth About Alaska that half of the river's thirty mile length was navigable by small boats. 538/ And Carl Lomen recalled decades later that



on June 24, 1900 he and two other men rowed from the river's mouth an unstated distance up to his camp consisting of several tents. 539/

The river at Nome was large enough to afford a small anchorage. John Hines recalled that in 1900 "small boats of all kinds were tied up there--rowboats, little steam tugs, catboats, barges, and a few Indian [sic] umiaks." 540/ A photograph in the purchase centennial picture collection showed two stern-wheelers and a barge on the river in the city. 541/ The U.S. Coast and Geodetic Survey noted that in 1900 there generally was enough water over the bars to allow light-draft steamers to enter the river. 542/ Two years later Edward J. Devine observed the dangers of storms on Nome's coast and noted that small vessels could take refuge in the river. 543/

The river also inhibited east-west travel along the coast. In 1899 E. G. McMicken paid a ferryman twenty-five cents to row him across the river at its mouth. 544/ Two others at Nome in 1900--Paul Becker 545/ and Irving Reed--also attested to the use of rowboats to cross the river. Reed later recalled that in its earliest times Nome "was really divided into two parts with a busy traffic in rowboats back and forth." 546/ The ferryman's business doubtless plummeted when W. E. Geiger built a bridge over the river in 1900. He charged men crossing it ten cents; women crossed for free. 547/

In 1916 J. C. Mahaffey's request to the Secretary of War for permission to build a bridge a half mile above the Snake's mouth generated more information about navigation of its lower stretch. A foot bridge spanned the river about a thousand feet above its mouth. 548/ Mahaffey wrote the Secretary of War that small coastal schooners and launches which met incoming steamers used the river up to the foot bridge. He stated that only rowboats and small launches went further up the river, though a gold dredge had worked above his proposed bridge and a storm in 1913 had washed up and wrecked a shallow-draft steamer near the dredge. 549/ The Alaska Road Commission's local engineer, Charles D. Jones, wrote that besides the stern-wheeler, the 1913 storm pushed two barges and three or four lighters above Mahaffey's bridge site; Jones stated that at high water the lighters could return to the lower river under the proposed bridge. He reported that "there has never been any navigation of the river at the proposed site with the exception of pleasure craft equipped with Evinrudes, or rowboats." Jones also described the Snake River's characteristics to a point a short way above Mahaffey's bridge site. He wrote that the river was thirty feet wide at its mouth with an average depth of six feet to its first bend. From this bend to the foot bridge it was almost ten feet deep. It quickly shoaled to three or four feet up to the second bend, and from the second bend to the proposed bridge it was only two to three feet deep. Above the bridge site the depth varied between two and four feet deep in a one-hundred-foot-wide channel. While at Mahaffey's crossing the normal depth was two feet, it reached eight to ten feet in southerly storms and six feet during June freshets. In the last instance the current could reach three miles per hour, but normally the current ran at two miles per hour. 550/

Most subsequent information regarding the lowest portion of Snake River referred to the improvement and dredging of a boat harbor to the joint mouths of Bourbon and Dry creeks. In 1917 Congress authorized two jetties at the river's mouth, revestments on the banks, and the dredging of a basin and a seventy-five-foot-wide, eight-foot-deep channel. The Corps of Engineers completed this work in 1923. 551/ A 1931 report stated that prior to this work a one-and-one-half-foot deep sandbar obstructed the river, except for its channel which was thirty feet wide and two or three feet deep. Inside the bar the river had been six feet deep and that "the head of navigation . . . was about 1/2 mile above its mouth." This report added that the tides reached about a half mile inland and that vessels sought the harbor both for shelter and to discharge freight. 552/



In the 1930s and 1950s the Corps of Engineers made repairs and further improvements to this harbor. 553/

The Alaska Road Commission had to deal with the difficulties the middle portion of the Snake River imposed on overland travel. In the early 1920s the ARC built and maintained an overhead trolley near Monument Creek and a suspension foot bridge of less than one hundred feet over the river near Boulder Creek. 554/ About a decade later freighter W. J. Rowe wrote to the Commission stating that the route along the Snake River required two river crossings. High water sometimes delayed his horse-drawn wagons and the crossings could risk lives and property. 555/

The BLM considered the Snake River's navigability in the course of conveying ANCSA lands to Nome. The entire length of the river, excluding numerous mining claims and other inholdings, fell within the selection area. The Fairbanks District Office in an undated and unsigned report noted that the mouth had been dredged and was used as a harbor and that tidal influence extended about two miles. An accompanying report on easements indicated that the Alaska Division of Lands and the Bureau of Mines proposed a streamside easement on that portion, estimated at fifteen miles, which the State considered navigable. The Fairbanks District Office supported this easement for the navigable part of the river, but stated that BLM's criteria might limit navigability to the lowest two miles. In May 1979 the BLM issued a Notice of Proposed Easement Recommendations which dropped the easement because of its recreational nature, stated that the river was nonnavigable, but added that it was tidally influenced to Anvil Creek. In the final easement statement the State Director set aside no bank easement, determined the river to be nonnavigable, and indicated that tidal influence rose to the southern boundary of Mineral Survey 1892 in Sec. 26, T. 11 S., R. 34 W., Kateel River Meridian. This position remained unaltered in a September 30, 1982 Decision for Interim Conveyance. 556/

## NOME RIVER

The U.S. Geological Survey's Frank C. Schrader, Alfred H. Brooks, and D. C. Witherspoon visited the newly-found gold district surrounding Nome in October 1899. Their subsequent report included the Nome River along with the Snake, Penny, Solomon, and Bonanza rivers and Cripple Creek as a water body with a "generally rather swift" current and up which "small boats" could proceed "8 to 10 miles" to the placer fields. 557/ They added that such boats and canoes were the principal means of traveling in the Nome region because "there are as yet but few definite and well-marked trails." 558/

Joseph Grinnell recorded his experience boating to prospects he and his friends mined in 1899. Sometime between August 25 and September 3 they traveled to a leased claim on Buster Creek. Grinnell described the trip as follows: "It took two days towing up Nome River, which is really nothing more than a creek. There were bars to drag the boat over every hundred yards. That brought us to the mouth of Buster Creek." From there they packed all their lumber and other supplies three miles to their claim. Between September 17 and the 20th they boated down the river and over to Nome in five hours. 559/

The U.S. Coast and Geodetic Survey reported that in 1900 "light-draft river steamers" normally could get into the river. In its reports of 1926 and 1938 the agency stated that vessels with four-foot drafts could enter the river; by 1954 it reduced the draft figure to three feet. 560/

In 1906 the USGS measured the river near its headwaters a short distance above Deep Canyon Creek. At low water the river was thirty feet wide, one and one-half feet deep, with a mean velocity of one foot per second. The daily discharge averaged 51.4, 50.4, and 64.4 second-feet in July, August, and September, respectively. Similar data collected in 1907 indicated that the average discharge was 202, 72.2, 32.9, and 58.4 second feet in June, July, August, and September, respectively. 561/

In the 1920s the Alaska Road Commission maintained a ferry across the Nome River near the mouth of Osborne Creek. This replaced a Seward Peninsula Railway bridge. The ferry, which was free, consisted of a small scow or flatboat on a light wire cable. 562/

The Nome River below T. 8 S., R. 32 W., Kateel River Meridian lies within lands selected under ANCSA by Nome. The BLM examined the water body's navigability and numerous easements along it in the process of conveying the land. The Fairbanks District Office noted on an unsigned and undated form that local residents used the river for subsistence purposes, that shallow-draft boats were used in the area, and that the tides probably extended one and one-half miles inland. On June 22-23, 1977 the BLM's easement staff convened to discuss easements and navigability pertaining to the Nome selection. It suggested that the Nome River might be navigable to "the Dexter area," but admitted that more research was necessary. It also recommended a streambed and streamside easement for the river and site and trail easements to access the river. In doing so the staff stated that the river was "a highly significant recreational river being used for boating, sportfishing, and raft racing." Such use apparently extended up as far as the river end of Easement number 41. This trail easement left the Nome-Taylor road in Sec. 29, T. 9 S., R. 33 W., Kateel River Meridian and trended westerly a short distance to the river. The easement staff wrote that the trail was utilized by fishermen, boaters, and others using the river. However, when BLM issued its Notice of Proposed Easement Recommendations on May 3, 1979, it dropped all the easements stating that their recreational nature did not coincide with new regulations. At the same time it stated that the Nome River was nonnavigable but tidally influenced to the north section line of Sec. 35, T. 11 S., R. 33 W., Kateel River Meridian. The agency's position changed only in modifying the estimated extent of tidal influence to the point in Section 33 where the Nome-Council road crossed the river when it issued a final easement memorandum the last day of 1981. The BLM maintained this position through its September 1982 Decision to Issue Conveyance. 563/

The BLM again addressed the Nome River's navigability in conveying 3(e) land to Nome Natives. The approximately 274 acres involved were in Sec. 3, T. 12 S., R. 33 W., and Sec. 34, T. 11 S., R. 33 W., Kateel River Meridian. In a memorandum of September 7, 1983, the BLM determined the river nonnavigable for this selection. That November 30th, the State wrote BLM informing the agency that local residents in jet-powered, flat-bottomed riverboats "regularly" traveled on the river. This "primarily recreational" use extended, the State indicated, to Dexter, presumably referring to the mouth of Dexter Creek. A month later BLM responded, denying the State's request to alter the agency's nonnavigable decision for the Nome River. 564/

#### HASTINGS CREEK

The BLM considered the navigability of Hastings Creek in the course of conveying land to Nome Natives. Unsigned and undated forms in the agency's file stated that shallow-draft boats plied waters in the area, that local residents used the creek for subsistence fishing, and that tides probably affected the lowest half mile. The easement staff in June 1977 recommended a site easement, including a twenty-five-foot-wide

strip of the creek bed fronting the site, within a couple hundred yards of the mouth. The staff noted that, "The area along Hastings Creek has been used in the past as a public recreation site for swimming, picnicking, camping, boating, fishing, and other similar uses." The staff did not believe the creek to be navigable. The BLM dropped consideration of the easement in its Notice of Proposed Easement Recommendations dated May 3, 1979 because of its recreational nature. The State Director determined Hastings Creek nonnavigable on the last day of 1981 and the BLM issued a Decision for Interim Conveyance for the land on September 30, 1982. 565/

## FLAMBEAU RIVER

Turn-of-the-century gold-rusher Eugene McElwaine wrote in his The Truth About Alaska that twenty miles of the thirty-five-mile long Flambeau River was navigable. However, the chronicles of prospecting the area were largely if not wholly silent on travel on the river. An Alaska Road Commission ferry did cross it below Eldorado River in the 1920s. Local ARC engineer Charles D. Jones described it as "the most important ferry operated by the Commission." Actually, the ARC only owned the cable; the Road Commission paid Charles Dahlquist a monthly salary to run his scow across the twelve-hundred-foot-wide river. 566/ Possibly historian Clarence L. Andrews referred to this ill-defined crossing as the point he met the Eskimo Ahwinina, probably in the 1920s. Ahwinina informed Andrews that the chief reindeer herder, Oscar Panik, had gone to Port Safety in a boat. It is not clear whether Panik had boated the Flambeau River. 567/

The BLM examined the Flambeau River below Sec. 25, T. 10 S., R. 32 W., Kateel River Meridian in the course of conveying ANCSA lands to Nome. In an undated and unsigned report the Fairbanks District Office noted that local residents had shallow-draft vessels and used the river for subsistence hunting and fishing. The BLM considered easements along the river, noting that "this highly significant area . . . is used for boating, camping, fishing, and general recreation." However, the agency eventually disregarded these proposed easements because of their recreational nature. The same Notice of Proposed Easement Recommendations which notified the public of this position also stated that the Flambeau was nonnavigable. Moreover, it stated that the Eldorado River, a tributary of the Flambeau, was tidally influenced through Sec. 16, T. 11 S., R. 31 W., Kateel River Meridian. The final easement statement estimated that tidal influence extended up the Flambeau to Sec. 19, T. 11 S., R. 31 W., Kateel River Meridian. The Decision to Issue Conveyance dated September 30, 1982 reflected this decision. 568/

The BLM also indirectly obtained information on the Flambeau in 1983 in the course of making a navigability decision on the Eldorado in State-selected T. 10 S., R. 31 W., Kateel River Meridian. According to Tommy Johnson, a thirty-year resident of the Nome area, jet boats could travel on the Eldorado and previously "some small boats were used on these rivers for fishing, but they had to be pulled for most of their trips by ropes." Presumably a part of these trips also took place on the Flambeau. 569/

## Eldorado River

Eugene McElwaine, who was in the Nome area about 1900, wrote that the Eldorado River was forty miles long and that it was navigable for half of this distance. 570/ Clarence L. Andrews, who was on the Seward Peninsula in the 1920s, wrote that he and an Eskimo traveled by kayak from Port Safety across Safety Sound. They then kayaked ten miles farther "through the maze of lakes, lagoons, and marshes filled with rank grasses, to where El Dorado [sic] River flowed out of the hills." Andrews crossed the river and descended it six miles to a cabin from where he started the next morning for Nome. 571/

The BLM considered the Eldorado's navigability in both Native- and State-selected lands. Nome selected an area including the river in T. 11 S., R. 31 W., Kateel River Meridian. A Fairbanks District Office worker wrote on a Bureau navigability form that shallow-draft boats traveled in the area and that the Eldorado was important for both recreation and subsistence. The District's easement staff in June 1977 recommended that the river be considered nonnavigable and that a streamside and streambed easement and a site easement be placed on the Eldorado "to provide continued public, recreational and subsistence use of this highly significant river where fishing, waterfowl hunting, camping, and boating takes place." The Notice of Proposed Easement Recommendations issued in May 1979 dropped the easements because of their recreational nature and stated that the Eldorado was nonnavigable but tidally influenced through Sec. 16, T. 11 S., R. 31 W., Kateel River Meridian. The December 31, 1981 final easement statement did not alter the agency's stance on navigability or revive the easement proposals and only changed the tidal extent to the east boundary of Section 17. The DIC issued in September 1982 maintained this position. 572/

The BLM also determined the Eldorado nonnavigable in State-selected T. 10 S., R. 31 W., Kateel River Meridian. The State Office's Sherman F. Berg contacted the agency's Nome office. Tommy Johnson, who had been in the Nome area about thirty years, visited the Nome office while Berg was on the phone. From Johnson Berg learned that jet boats could travel on unspecified portions of the Eldorado and that in previous years people tracked small boats up the river to fish. The State Director determined the river nonnavigable in the township on May 17, 1983. 573/

#### BONANZA RIVER

The USGS's Frank C. Schrader, Alfred H. Brooks, and D. C. Witherspoon visited the newly-found gold district surrounding Nome in October 1899. One or more of these men traveled to and mapped the Bonanza River drainage. Their subsequent report included Bonanza River, along with the Snake, Nome, Penny, and Solomon rivers, as a water body with a "generally swift" current and up which "small boats" could proceed "eight to ten miles" to the placer fields. 574/ They added that "In the Nome region, along the coast, waterways, and streams of sufficient size, travel and transportation are principally by small boats and canoes. Across the country there are as yet but few definite and well-marked trails." 575/ Eugene McElwaine, another gold-rush era visitor, commented in his 1901 book that the Bonanza River was navigable for small boats for about its lowest twenty miles. 576/

Starting in 1906 the Alaska Road Commission assisted in the maintenance of ferry service across the river near its mouth. The 1907 Road Commission report stated that the river was not fordable, but that in 1906 the agency had not considered traffic to be sufficient to make ferry service self-supporting. Therefore, the ARC guaranteed the wages of the ferryman. The ferry was able to carry horses and wagons; it transported twenty-two of the latter in August and September 1906. In 1907 the agency determined that the ferry could be self-sustaining and discontinued subsidization. 577/ In 1919 Harry Ewert served as ferryman using a small gasoline launch. 578/ The following year Henry Nokarok ran the ARC's new ferry on an ARC salary. The crossing was 250 feet and the ferry could accommodate wagons. 579/ The Road Commission placed a new ferry at this crossing. 580/ In 1935 it had a hand-powered "cable scow" capable of carrying a ten-ton load. In that year it carried 635 people, 249 automobiles and tractors, 40 tons of freight, and a scattering of wagons, sleds, horses, and dogs. 581/

In the 1970s the village of Solomon and the State selected lands including much of the Bonanza River. In August 1980 the Fairbanks District Office reported that it was a narrow river, broad and deep at its mouth, tidally affected through T. 11 S., R. 29 W., Kateel River Meridian, but nonnavigable. The State Director concurred in this recommendation on March 9, 1981. On May 1, 1982 the District Office submitted a report stating that the Bonanza River was nonnavigable in T. 8 S., R. 30 W., Kateel River Meridian, noting its physical unsusceptibility and lack of evidence of use. The State Director concurred with this position on May 25th. Finally, the BLM examined the Bonanza River in Tps. 10-11 S., R. 30 W., Kateel River Meridian for a State selection. In May 1983 the Navigability Section's Sherman F. Berg spoke to Tommy Johnson, a three-decade resident of the Nome area, concerning boating on the river. Johnson told Berg that jet boats could ascend the Bonanza an unstated distance and that "some small boats were used . . . for fishing, but they had to be pulled for most of their trips by ropes." On May 17 the BLM determined the river nonnavigable in the two townships. 582/

### SOLOMON RIVER

The USGS's Frank C. Schrader, Alfred H. Brooks, and D. C. Witherspoon visited the newly-found gold district surrounding Nome in October 1899. One or more of these men traveled to and mapped the Solomon River. Their subsequent report included it, along with other area water bodies, as a river with a "generally swift" current. The report indicated that "small boats" could proceed "eight to ten miles" to the placer fields 583/ and added that in general people traveled by small boats and canoes in the Nome region because "there are as yet but few definite and well-marked trails." 584/

In the first decade of this century there were numerous published references to travel on the Solomon River. Eugene McElwaine, a gold rush era visitor, commented in his 1901 book that the Solomon River's width varied from ten to one hundred yards and was navigable for about fifteen miles from the coast. 585/ About the same time Arthur Walden, traveling in a boat from Golovin to Nome, found shelter from a storm by boating up the river. 586/ The U.S. Coast and Geodetic Survey noted in 1926 that in 1902 a bar at the entrance of the Solomon carried three feet of water. 587/ L. S. Quackenbush on a paleontological survey in August 1907 made a short ascent of the river. 588/ The following year Thomas A. "Tex" Rickard made a horseback trip along the Solomon River to his mining operations near Council. Along the way he and his party forded the river seventeen times. 589/ Finally, in 1908 the USGS gathered approximate discharge data for the Solomon River below the East Fork. From July 1 through September 18 the highest discharge was 626 second-feet on August 5 and the lowest was 40 on July 27; the daily averages for July, August and the first eighteen days of September were 96, 150, and 96 second-feet, respectively. 590/

The BLM addressed the navigability of all but the uppermost three miles of Solomon River in a report drafted in August 1980 for State- and Native-selected land in Tps. 10-11 S., R. 29 W., and Tps. 9-10 S., R. 28 W., Kateel River Meridian. The Fairbanks District Office reported that the river channel was narrow with a gravel bottom and that the tides extended to the settlement of Solomon. The District Office recommended the Solomon be determined nonnavigable. The State Director concurred in March 1981. 591/ Four years later the BLM determined the headwaters of the Solomon in T. 8 S., R. 28 W., Kateel River Meridian to be nonnavigable because its gradient of fifty to two hundred feet per mile made it unsuitable of commercial navigation. 592/

## FISH RIVER

Natives traditionally traveled on the Fish River for subsistence and probably to travel to the Kuzitrin drainage. For his 1983 study of historic sites in the Norton Sound area, Fish River Natives told anthropologist William Sheppard that they traditionally hunted caribou on Kuzitrin Lake in the late summer. Sheppard does not explicitly state how the Natives got to the lake but noted a skin boat storage site at a fork (T. 3 S., R. 23 W., Kateel River Meridian) far up Boston Creek, a Fish River tributary. Sheppard's research also revealed a fish site at the mouth of Etchepuk River as well as similar sites below that point. 593/

There were conflicting reports of an inland water route utilizing the Fish and Kuzitrin river systems. Dorothy Jean Ray in The Eskimos of Bering Strait recorded that in 1821 Russian explorer Vasilii S. Khromchenko sailed into Golovnin Bay where he communicated with local Natives. They told him that a five-day boat trip up the Fish River could bring them to Shishmaref Inlet. Khromchenko corrected this information in an 1824 publication, indicating that the western terminus of this route was gained via the Kuzitrin. The account of a Native named Tungan at Golovnin Bay in August 1822 probably helped Khromchenko correct the confusion of Shishmaref Inlet and Imuruk Basin. Tungan told Khromchenko that he returned to Golovnin Bay from King Island through a pass between the Kuzitrin and the Fish's tributary, the Niukluk River. Two other Natives had recently reached the bay by the same route. Ray hypothesized that the portage was between the headwaters of Belt Creek and the Niukluk River. Daniel B. Libby, an American in charge of the Western Union telegraph line construction in the area in 1867, wrote that the Fish and Niukluk were "navigable for skin canoes alone." 594/

Two Americans, however, disputed the use of the route. William H. Ennis explored the region in the winter of 1865-66 as part of Western Union's efforts to construct a telegraph from Europe to North America via Siberia. He was interested in the suitability of the Kuzitrin and Niukluk for transporting supplies, including telegraph poles along the proposed line. In December 1865 he wrote his superior that, "All seem to think, that the rivers from Golovine [sic] Sound to Grantley Harbor, are not navigable, even for skin boats, and this seems to me to be true; for, were those streams navigable, the Indians would not take the route along the coast, when trading to Port Clarence, when the river traveling is so much shorter." 595/ Ennis later wrote that it was impossible to raft logs up the Fish and Niukluk because of "the strong current of these rivers." However, he did feel that logs could be rafted up from Grantley Harbor to a portage. Here oxen could transport them through a long barren portage to the Niukluk. Walter C. Mendenhall, who reconnoitered the Norton Bay area in 1900 for the USGS, also was skeptical of the Kuzitrin-Niukluk-Fish rivers route. He wrote that, "the all-water summer route which appeared so long on maps of the region does not exist, and the portage of 9 miles is such a barrier to summer travel that during this season the trip is much more easily made by boat through Norton Sound and Bering Sea." 596/

In 1880 whites for the first time examined the Fish River above the Niukluk. William P. Gallagher, a whaling schooner captain, convinced Natives to take him to one of their summer fish camps. Presumably, they traveled by umiak or kayak. The Natives showed him ore on a hill near their fish camp, which proved rich in silver. They had revealed the Omilak deposit. The following year Gallagher and others returned to the area and by August 11 they were transporting ore in Native skin boats down to their ship in Golovnin Bay. The mine reportedly produced 55 tons in 1883, 125 tons in 1885, and 30 tons the following year. 597/ The Revenue ship Corwin visited Golovnin Bay in 1885 where

Captain Michael A. Healy met a mine employee named Mackey. Healy recorded that the mine was only thirty miles upriver, but that "the shallowness of the water makes it a matter of no little difficulty to convey the ore from the mine." 598/ Miners probably continued to transport their production by Native boats with Native help. With additional financial resources, the miners in the early 1890s intended on constructing a forty-five-mile-long tramway from the mine to the bay and sent a stern-wheeler with a fifty-ton capacity for transportation up the river. But they later reported that they had ascended the river in umiaks instead. The mine worked a few years in the twentieth century. The river again provided transportation, but the precise mode is uncertain. 599/

Carl Rydell was among the first gold-rush era prospectors on the Fish River. He traveled up to Council City on the Niukluk River in the middle of July 1898 on a small river steamer, the Independence. Rydell later recounted that the Independence was the only vessel besides the Natives' umiaks on the river. Rydell skippered the boat between the coast and Council until late August or early September, bringing up his partners' supplies and carrying others for a fee. He marked the river channel to make navigation easier. Steamboating on the Fish ended for that year when Rydell found the rapidly falling river prevented continued use. He put it in winter quarters near White Mountain and with his shipmates brought the supplies from the stranded Independence nearly to Council with umiaks by poling or tracking with dogs. The following summer Rydell again transported passengers up and down the river on the Independence. 600/

In 1900 two USGS exploration parties ascended the Fish River. Alfred H. Brooks led seven men up the river in three Peterborough canoes in late June and July. They traveled up the Niukluk; five portaged into the Pilgrim River drainage while three canoed back down the Fish to the coast. 601/

Walter Mendenhall and four others started canoeing upriver about the same time as Brooks' group. It took them two days to ascend from White Mountain to the Niukluk. They continued up the Fish, mapping as they went. By July 14 they reached the mouth of Omilak Creek. Mendenhall and one assistant took a light canoe up this stream ten or eleven miles "to the point where the company operating at Omalik [sic] Mountain had landed wagons and outfits for development and test work nearly twenty years ago." On the 17th they returned to the river and continued upstream. Mendenhall stated that he overtook the rest of the party "several miles up the river" about noon on the 18th. There may have been some confusion on Mendenhall's part on this point. On a map accompanying his report, he marked a July 17 camp (presumably that of his subordinates who preceded him upriver) at what almost certainly is Lava Creek. Lava Creek is over twelve miles above Omilak Creek. Furthermore, Mendenhall wrote elsewhere in the report that the July 17 camp was thirteen miles above Omilak Creek. He stated that this point was the "head of loaded-canoe navigation." At any rate a severe rain and wind storm beset them on the afternoon of the 18th and the following day. The higher water which followed the rain allowed them "to advance about 5 miles more" with two canoes and only three or four days' provisions. Their July 20 camp, marked a mile below Wagon Wheel Creek, may have been the end of their canoe journey. They hiked about the mountains for a couple days. On the 23rd they began their descent of the Fish, arriving at Golovnin Bay at noon July 27. 602/

Brooks and, to a lesser extent, Mendenhall were "exploring" in the midst of scores of busy prospectors. Mendenhall wrote that, "the lower course of Fish River was one of the highways into the interior during the past summer, and as far as the mouth of the Niukluk prospecting parties were met daily." 603/ The gold-seekers worked upstream "with any kind of craft that would carry supplies or was capable of being propelled by



tracking or sailing or the use of dog teams." Most of these men did not ascend the Fish River above the Niukluk. The "few prospectors" 604/ Mendenhall observed above that tributary concentrated their activity in the vicinity of Slate Creek. 605/

Brooks noted that "White Mountain is usually considered the head of steamboat navigation, though at high water small steamers have ascended the Niukluk as far as the mouth of Melsing Creek. From White Mountain transportation is usually by small boats, which are towed up the river. During low water even rowboats find difficulty in crossing the river bars." 606/

In September 1900 one prospector recently into Nome after a trip from Council stated he had encountered "at least 100 men going up the river with their outfits." 607/ Frances Ella Fitz was a member of the Rowe Mining Company which she accompanied on a prospecting trip up the Fish Valley in 1900. They sailed two small boats from Nome to and up the Fish River to the mouth of the Fox River. There they prospected and wintered, returning downriver in the spring on Rydell's Independence. 608/

Lanier McKee described the miners' boating experience on the Fish in greater detail. White Mountain, where the Wild Goose mining company had a warehouse, was "the head of navigation for the several small, light-draft stern-wheelers which occasionally make the trip in the interest of the larger mine-owners." Sometimes these steamers towed smaller boats behind them. The Arctic Bird towed McKee's Mush-on to White Mountain in 1900. McKee described the river as clear, swift, and shallow averaging less than two feet deep, with a gravel bottom. The Arctic Bird grounded many times. On July 17 McKee and his three partners proceeded above White Mountain in the shallow-draft, twenty-two-foot-long Mush-on with only half their supplies. They contracted with someone else to bring up the rest. Three men pulled the boat with a rope while the fourth alternately rowed or jumped into the stream to guide the boat. Some men with more poorly constructed boats had to unload them in order to get through riffles. In September McKee traveled downriver from Council. He and his friends took the wrong fork in the delta and only got to Golovnin Bay by all hands getting out and pulling the boat, which then drew "practically no water." McKee returned to Council the next year. The steamer North Star took him to White Mountain. Freighter "Ed" Trundy carried one and one-half tons of McKee's supplies the rest of the way to Council for three cents per pound. McKee noted that the best adapted boat between White Mountain and Council was a long, shallow scow pulled upstream by a horse; the horse would ride as freight on the downstream trip. 609/

Horse-drawn boats became the primary means of bringing supplies from White Mountain to Council in the first years of the twentieth century. The U.S. Geological Survey's Chester Purington wrote in 1905 that a strong horse could pull a flatboat with a five-ton load "during favorable conditions of water" from White Mountain to Council and on up the Niukluk and Casadepaga rivers. 610/ In the same year Wilds P. Richardson of the Alaska Road Commission traveled up the Fish River. A small river steamer took him to White Mountain. From there he went up to Council in a horse-drawn boat whose operation he described as follows: "The horse draws the boat, about 5-ton scow, wherever footing can be found along the bank, or the stream is not too deep for him to wade. When the situation is too much for him he is taken aboard the boat and the boat 'poled' to where he can take up his work again." 611/ In 1908 the USGS published another report which stated that "small power boats" could navigate to Council but that "the usual method of freighting supplies is by steamer to White Mountain, at the head of tide water, and thence by flatboat." 612/



As Council's population fell after the gold rush to Ophir, Melsing, and nearby creeks ended, so too did boat travel on the Fish River. However, horses continued to drag boats upstream in the 1920s. On August 1, 1925 John and Hazel Berto traveled with six others from Golovnin Bay to White Mountain in a launch which struggled to enter the river. Their Native boatman said "The river . . . is very shallow sometimes. We have hard time, many times. Maybe we have to get out and walk along the bank part way." When asked how barges and scows went upstream, the Native replied, "They bring horses on the barge. When the shallow water comes, horses get off the barge and from the bank pull the barge over the riffles. Then horses get back on the barge." At White Mountain that summer Hazel Berto noticed "almost no traffic upriver". When the river broke the following spring some Natives quickly used the opportunity to kayak to the coast to hunt seals. The Bertos traveled to the delta's mudflats by motorboat and later took a horse-drawn scow on a two-day journey to Council. 613/

At least one commercial freighter continued to ascend the Fish and Niukluk rivers to Council into the 1940s. In 1941 L. E. Ost freighted supplies for the Alaska Placers mining operations. This use was pertinent to the Federal government's stance that the Niukluk was navigable to about 1,500 feet above Council, according to A. B. Shallit in a 1941 letter to B. D. Stewart, Alaska's Commissioner of Mines. However, Shallit observed that Ost contemplated abandoning river freighting "in a year or less." 614/ A Corps of Engineers report the following year noted that shallow-draft boats lightered supplies from Golovnin Bay to Council, 615/ and a White Mountain resident noted in February 1945 that his village depended heavily on river freighting for its supplies. 616/

The Natives of White Mountain received Interim Conveyance to lands encompassing portions of the Fish River in 1980 and 1982. Throughout the conveyance process the BLM demonstrated little question that the river was navigable. In November 1978 its easement staff recommended the Fish be considered navigable. The State Director issued nearly a year later, a final easement memorandum determining the river navigable on the basis its history of commercial freighting to White Mountain and Council and use by subsistence and sport fishermen and hunters. Thus, on February 15, 1980 the BLM granted interim conveyance to the village excluding portions of the Fish up through Sec. 24, T. 8 S., R. 24 W., Kateel River Meridian. 617/

That October the BLM issued a Notice of Proposed Easements Recommendations for portions of T. 7 S., R. 22 W., and Tps. 7-8 S., R. 23 W., Kateel River Meridian which justified a finding that the river was navigable in the selection area by noting subsistence and sport boating in conjunction with hunting and fishing. Both Alaska's Department of Natural Resources and its Department of Fish and Game informed the BLM that the Fish received heavy use through the conveyance area. The Arctic-Kobuk Resource Area Manager in late 1981 also stated that Nels Swanberg reached his Aggie Creek mining claims by boat from Council. Aggie Creek meets the Fish just above the village's selection. On February 9, 1982 the State Director determined the Fish River navigable in the conveyance area which included Sec. 6, T. 7 S., R. 22 W., Kateel River Meridian. The BLM issued an Interim Conveyance for this land excluding the riverbed that May. 618/

### Boston Creek

For his 1983 study of historic sites in the Norton Sound area, Fish River Natives told anthropologist William Sheppard that they traditionally hunted caribou on Kuzitrin Lake in the late summer. Sheppard did not explicitly state how the Natives got to the lake but noted a skin boat storage site at a fork (T. 3 S., R. 23 W., Kateel River Meridian) far up Boston Creek. 619/

### Omilak Creek

In the 1880s miners transported several hundred tons of silver ore from a mine near this creek. They used Native skin boats on Fish River for this purpose at least into the early 1890s. 620/ The USGS's Walter C. Mendenhall indicated that miners probably shipped ore and supplies on Omilak Creek by boat. By July 14, 1900 Mendenhall's exploration party had canoed up the Fish River to the mouth of the creek. Mendenhall and one assistant took a light canoe up Omilak Creek ten or eleven miles "to the point where the company operating at Omalik [sic] Mountain had landed wagons and outfits for development and test work nearly twenty years ago." He noted wagons and carts and a track leading from the landing to the mine headquarters. 621/

### Niukluk River

Natives traditionally traveled on the Niukluk River for subsistence and to travel to the Kuzitrin drainage. For his 1983 study of historic sites in the Norton Sound area, Fish River basin Natives told anthropologist William Sheppard that they had traditional summer fishing sites near the mouths of Melsing and Ophir creeks. Sheppard did not state how they traveled to these sites, but they probably used skin kayaks or umiaks. 622/

There were conflicting reports of an inland water route utilizing the Fish and Kuzitrin river systems. Dorothy Jean Ray in The Eskimos of Bering Strait recorded that in 1821 Russian explorer Vasilii S. Khromchenko sailed into Golovnin Bay where he communicated with local Natives. They told him that a five-day boat trip up the Fish River could bring them to Shishmaref Inlet. Kromchenko corrected this information in an 1824 publication, indicating that the western terminus of this route was gained via the Kuzitrin. The account of a Native named Tungan at Golovnin Bay in August 1822 probably helped Khromchenko correct the confusion of Shishmaref Inlet and Imuruk Basin. Tungan told Khromchenko that he returned to Golovnin Bay from King Island through a pass between the Kuzitrin and Niukluk rivers. Two other Natives had recently reached the bay by the same route. Ray hypothesized that the portage was between the headwaters of Belt Creek and the Niukluk River. Daniel B. Libby, an American in charge of the Western Union telegraph line construction in the area in 1867, wrote that the Fish and Niukluk were "navigable for skin canoes alone." 623/

Two Americans, however, disputed the use of the route. William H. Ennis explored the region in the winter of 1865-66 as part of Western Union's efforts to construct a telegraph from Europe to North America via Siberia. He was interested in the suitability of the Kuzitrin and Niukluk for transporting supplies, including telegraph poles along the proposed line. In December 1865 he wrote his superior that, "All seem to think, that the rivers from Golovine [sic] Sound to Grantley Harbor, are not navigable, even for skin boats, and this seems to me to be true; for, were those streams navigable, the Indians would not take the route along the coast, when trading to Port Clarence, when the river traveling is so much shorter." 624/ Ennis later wrote that it was impossible to raft logs up the Fish and Niukluk because of "the strong current of these rivers." However, he did feel that logs could be rafted up from Grantley Harbor to a portage. Here oxen could transport them through a long barren portage to the Niukluk. Walter C. Mendenhall, who reconnoitered the Norton Bay area in 1900 for the USGS, also was skeptical of the Kuzitrin-Niukluk-Fish rivers route. He wrote that, "the all-water summer route which appeared so long on maps of the region does not exist, and the portage of 9 miles is such a barrier to summer travel that during this season the trip is much more easily made by boat through Norton Sound and Bering Sea." 625/

Carl Rydell was among the first gold-rush era prospectors on the Niukluk River. He traveled to Council City in the middle of July 1898 on a small river steamer, the Independence. Rydell later recounted that the Independence was the only vessel besides the Natives' umiaks on the river and that Council was as far upstream his steamboat could go. Rydell skippered the boat between the coast and Council until late August or early September bringing other stampeders to the Niukluk gold fields as well as bringing up his partners' supplies. He marked the channel making navigation easier. Rydell ceased steamboating in 1898 when he found the rapidly falling river prevented continued use. He put the Independence into winter quarters near White Mountain and with his shipmates brought the supplies from the stranded Independence nearly to Council with umiaks by poling or tracking with dogs. The following summer Rydell again transported passengers up and down the river on the Independence. 626/

In 1900 the USGS's Alfred H. Brooks led seven others up the Fish and Niukluk rivers in three Peterborough canoes in late June and July. They all paddled to the mouth of the Casadepaga River; five continued up the Niukluk and portaged into the Pilgrim River drainage, while three ascended the Casadepaga before canoeing back down the Fish to the Coast. 627/

The USGS was "exploring" in the midst of scores of busy prospectors and miners. One prospector recently returned to Nome in September 1900 stated that he had encountered "at least 100 men going up the river with their outfits." 628/ Walter C. Mendenhall, who led a Survey party up the Fish River above the Niukluk at the same time as Brooks' journey, noted that the great majority of men who used "the lower course of Fish River [as] one of the highways into the interior" headed up the Niukluk. 629/ They worked upstream "with any kind of craft that would carry supplies or was capable of being propelled by tracking or sailing or the use of dog teams." 630/

Brooks observed that, "White Mountain is usually considered the head of steamboat navigation, though at high water small steamers have ascended the Niukluk as far as the mouth of Melsing Creek. From White Mountain transportation is usually by small boats, which are towed up the river. During low water even rowboats find difficulty in crossing the river bars. 631/

A number of gold-rushers recorded their remembrances of boating on the Niukluk River. Lanier McKee boated up the Fish and Niukluk reaching Council on July 19, 1900. He described the Niukluk as "a tributary nearly as large as the main stream." The Niukluk "in places was broad and shallow, or broken up into a number of streams by alternate gravel bars, or occasionally the stream broke, forming an island." McKee wrote that a narrow, shallow-draft boat was essential to move freight up the river. He made a twenty-two-foot boat christened Mush-on for his journey. On the Fish, and possibly the Niukluk River, he and his partners powered the boat primarily by towline. But near Council "the tow-line was practically abandoned, and it was a case of hauling and shoving the boat with hands and shoulders, one of us frequently going on in advance to discover a route which would afford the necessary passage, or to kick out a channel through the stones and gravel." In all it took them twenty-three hours actual travel time to go from White Mountain to Council. McKee described the Niukluk at Council as about one hundred yards wide. In early September, though, a heavy rainstorm set in, turning the Niukluk into "a young Mississippi." The river bar was completely covered, enabling a wind-powered freighter to sail up to Council. On September 9, McKee and others departed on an uneventful trip on the Niukluk for the coast. 632/

Frances Ella Fitz prospected on the Fox River, a Fish River tributary below the Niukluk, in 1900 and occupied a cabin in Council the next year. She later wrote that flat-bottomed boats hauled winter supplies up to Council. The shipping cost by coastal freighter and flatboat from Nome was one hundred dollars a ton. Fitz recalled that one entrepreneur shipped two tons of beans up the Niukluk in horse-drawn boats. 633/

Others also addressed traffic on the Niukluk. Missionary Edward J. Devine made trips to Council between 1902 and 1904. He wrote that uprooted trees in the Niukluk and Fish rivers caused dams and rapids and that two to three miles per hour was the average upriver freighting time on these rivers. While at Council he observed Natives taking kayaks and umiaks downstream. 634/ J. S. McClain, who accompanied a Senate subcommittee examination of Alaska, noted that boats took "considerable quantities of machinery" to Council. 635/ The next year Klondy Dufresne with her parents traveled in a scow down from Council to the sea. She recalled in reminiscences published in 1958 that the scow had a plank deck just large enough to carry their "tow horse." 636/

Horse-drawn boats became the primary means of bringing supplies from White Mountain to Council. The USGS's Chester Purington wrote in 1905 that a strong horse could pull a flatboat with a five-ton load "during favorable conditions of water" from White Mountain to Council and on up the Niukluk and Casadepaga Rivers. He added that horse boats up to Council formed part of a transportation route which allowed larger mining companies to deliver supplies to mines near Council at only two cents above San Francisco prices. 637/ In the same year Wilds P. Richardson of the Alaska Road Commission traveled to Council from White Mountain in a horse-drawn boat whose operation he described as follows: "The horse draws the boat, about 5-ton scow, wherever footing can be found along the bank, or the stream is not too deep for him to wade. When the situation is too much for him he is taken aboard the boat and the boat 'poled' to where he can take up his work again." 638/

In 1908 the USGS published another report which stated that "small power boats" could navigate to Council, but that "the usual method of freighting supplies is by steamer to White Mountain, at the head of tide water, and thence by flatboat." The same report stated the flatboat provided the primary means of bringing supplies to the mouth of Goldbottom Creek, ten miles above Council. 639/

As Council's population fell after the gold rush to Ophir, Melsing, and nearby creeks waned, so too did boat travel on the Niukluk River. Yet boats continued to ascend the river. The USGS reported in 1918 that boats brought supplies from Golovnin to Council for thirty-five dollars a ton. John and Hazel Berto traveled from White Mountain to Council in that way in 1926. 640/ For some, if not all, of the period from 1920 to 1935 the Alaska Road Commission provided for a boat to ferry mail, dogs, and people from Council to a stage line to Nome with a terminus on the south side of the Niukluk. 641/

At least one commercial freighter continued to ascend the Fish and Niukluk rivers to Council into the 1940s. L. E. Ost freighted supplies for the Alaska Placers mining operations in 1941. This use was pertinent to the Federal government's stance that the Niukluk was navigable to about 1,500 feet above Council, according to A. B. Shallit in a 1941 letter to B. D. Stewart, Alaska's Commissioner of Mines. However, Shallit observed that Ost contemplated abandoning river freighting "in a year or less". 642/ A Corps of Engineers report the following year noted that shallow-draft boats lightered supplies from Golovnin Bay to Council. 643/

Papers filed for the 1941 Niukluk navigability case provide much more information on commercial travel on the Fish and Niuluk rivers to Council. The case developed when the defendants mined the riverbed below Melsing Creek. The federal government believed this portion of the river to be navigable and held in trust for the future State of Alaska. A government brief cited much evidence to support a finding of navigability. It noted that William Schroeder began freighting on the river in 1902. That year he operated one of the Big 4 Mining and Trading Company's scows continuously making a round trip every three days between White Mountain and Council. The company's four or five scows were forty to sixty feet long with a seven to eight-foot beam. They drew fourteen to eighteen inches when loaded and had a capacity of five to nine tons. They floated downstream; a horse pulled each upstream using a 250-foot rope. Operators sometimes had to adjust the load to meet shallow water conditions. The brief stated that there were at least a dozen scows on the river in 1902.

Again apparently relying on Schroeder's memory, the government brief summarized Niukluk River traffic in 1903, 1904, and 1905. In 1903 the Wild Goose Mining Company brought in thousands of feet of hydraulic pipe by boat. The steamers Pauline and Arctic Bird towed barges with capacities of forty-five or fifty tons to within six miles of Council. Also, George Bean ran an oil engine passenger boat called the Rough Rider to Council City. It was able to push a freight barge before it. In 1904 Schroeder and Walter Beck ran two scows on the river and hauled four hundred tons of freight. In 1905 Schroeder worked for a while freighting on the river with Joe Sugg and then ran Captain Hunter's five-scow operation. Although Hunter's scows hauled freight only for a few stores and saloons, they carried over one thousand tons that season. Schroeder left the area in 1906, but returned for the period 1911 to 1917. Joe Sugg and Ed Pfaffle moved supplies up the river during this period. Schroeder stated that mail and passengers but little freight came to Council by rail and road because the road was difficult. An August 1940 affidavit by Charles J. Clasby, the U.S. District Attorney noted that the river continued to be the primary means of bringing freight to Council. He stated that over the previous seven years an average of two hundred tons moved up the Niukluk annually. According to information in the federal brief, Clasby's estimate was conservative. The brief asserted that L. E. Ost began river hauling in 1933. That year he brought 150 tons up the river. In the following six years his power-driven scow transported over seventeen hundred tons to Council. Based upon this extensive record of use, U.S. District Judge J. H. Morison ruled on September 9, 1941 that the Niukluk was navigable to a point fifteen hundred feet above its confluence with Melsing Creek. 644/

#### Libby River

The BLM considered the navigability of Libby River when it processed a State conveyance for T. 5 S., R. 28 W., Kateel River Meridian. On May 1, 1982 the Fairbanks District Office recommended that the river be considered nonnavigable in this township, citing its physical unsusceptibility and the lack of evidence of use. The State Director concurred with this recommendation on May 25, 1982. 645/

In March 1985 Sherman F. Berg of BLM's Navigability Section spoke with Dan Stang to get water transportation information regarding the Niukluk River. Stang who hunted, fished, and camped in the area stated that he had taken an eighteen-foot, flat-bottomed riverboat six miles up Libby River. The boat was made by Lund and was powered by an eighty-five-horsepower jet motor. 646/

#### American Creek

In 1908 the USGS took a scattering of measurements on the water flow of American Creek, a Niukluk tributary. The USGS made observations at the mouth of Auburn Creek

on July 9, July 18, August 3, and September 17. On the first three days the discharge was no greater than two second-feet. In September it was 7.2. On July 9, July 18, and August 25 the agency found the discharge just below Game Creek to be between 2.6 and 5.9 second-feet. 647/

The BLM determined American Creek nonnavigable in T. 6 S., R. 28 W., Kateel River Meridian in the course of conveying lands in that township to the State. In early May 1982 the Fairbanks District Office cited a lack of information and the creek's physical character to recommend such a finding; later that month the State Director concurred. 648/

#### Casadepaga River

In 1900 Alfred H. Brooks led an eight-man USGS party up the Fish and Niukluk rivers in three Peterborough canoes. Three of the men in the expedition detached from the main group and traveled up the Casadepaga to its head. Brooks does not explicitly state that they used a canoe to travel on the Casadepaga, but they did have one at their disposal and later used it to return to the mouth of Fish River. 649/

In the fall of 1900, a rather dry year on the Casadepaga, Michael Twoby rowed up the river an unstated distance with supplies. He cached some of his supplies and then took the boat across the river to prospect. Upon his return, he found his boat gone and he could not get to his supplies. Twoby complained before U.S. Commissioner R. N. Stevens in Nome in December. A newspaper account of the court hearing noted that a man brought Twoby's testimony into question, stating that he had easily forded the river at the point Twoby claimed to have been stranded. In any case, Twoby probably was one of many prospectors who boated on the Casadepaga that year. The July 18, 1900 Nome News stated that the "upper Casadepaga [sic] is full of men who have gone up the rivers in boats." 650/

The USGS's Chester W. Purington wrote in 1904 that during June and early July with "favorable conditions of water," horses could pull a flatboat up the Casadepaga with five tons. 651/ Four years later the Survey published a report stating that the Casadepaga "is navigable for small boats and canoes for a distance of about 15 miles." 652/ Also in 1908, a relatively dry year, the USGS measured the river's daily discharge below Moonlight Creek (T. 8 S., R. 29 W., Kateel River Meridian) from July 1 through September 18. The lowest flow was from July 25 to 29th when the discharge was only 20 second-feet. The peak flow was 1,080 second-feet on July 30. The average daily discharges were 92.1, 78.7, and 51.9 second-feet for July, August, and September, respectively. 653/

Bill and Irene Gillette rafted on the river shortly after WWII. They flew into a landing field near Ruby Roadhouse and hiked twenty miles to their cabin to do assessment work. Four miles above their cabin, they found oil drums. From these the Gillette's constructed a raft which they floated to the cabin and then in July loaded up their gear and rode it to Council. Their starting point is uncertain, but they did float past Bonanza Creek. They probably were not far up the Casadepaga because they spent twelve hours their first day on the Niukluk. Irene Gillette later recounted that they "were very busy avoiding riffles where the river bubbled over mighty boulders." This statement apparently referred to travel on the Casadepaga. 654/

On May 25, 1982 BLM's State Director determined the Casadepaga River nonnavigable in T. 7 S., R. 28 W., Kateel River Meridian which includes the river's head. This determination was for State-selected land and followed the recommendations of the Fairbanks District Office, which justified its position on a lack of evidence of use and the river's physical unsusceptibility. 655/

The BLM determined the river nonnavigable in Tps. 7-8 S., R. 28 W., Kateel River Meridian on March 15, 1985. The agency based this decision on interviews the previous month with four men familiar with the river. Fred DeCicco of the Alaska Department of Fish and Game had been up the river an unstated distance in a sixteen-foot riverboat and he told the BLM researcher that others also use the river for recreation in jet boats. But he said he thought only jet boats could travel on the river which he described as very shallow over riffles and gravel bars. Charlie Lean of the Alaska Department of Fish and Game had taken a jet-powered boat a couple miles up the Casadepaga. He stated that the river was only an inch or two deep over several riffles. Herb Brownell, a BLM realty specialist who had flown over the area, also described the river as shallow and rocky and he said he doubted its navigability. Barrow Morgan, who owns a boat motor repair shop in Nome, confirmed the Casadepaga's shallowness. He added that in times of high water it was possible to navigate a jet boat up to his camp five miles upriver from the mouth with great difficulty. He stated that a boat with a propellor outboard would not be able to make it to his camp. 656/

#### Ophir Creek

At the turn of the century there was some interest in boating up Ophir Creek, a very rich placer stream near Council. Alfred H. Brooks visited the creek on his 1900 expedition up the Fish River. In his report Brooks included a photograph of two men pulling and pushing a canoe with gear on a "tributary of Ophir Creek," and stated that Ophir Creek "is not navigable, though when the water is high small boats can be taken up it for a few miles." Most miners followed a trail "up which pack animals can easily pass." 657/ In 1902 a railway connected Council to the Ophir mines.

#### Melsing Creek

Alfred H. Brooks of the USGS, who led an expedition up the Niukluk River in the summer of 1900, wrote that Melsing Creek "had a little water in it in the dry season, but was not navigable even for small boats." 658/

#### Bear River

In 1906 the Alaska Road Commission built a corduroy road from the East Fork Solomon River to Council. Stages drove this route which included fording Bear River at or near the present Nome-Council crossing. 659/ Two years later the ARC put an aerial tram across the river. The Road Commission maintained this tram at least through 1922. 660/

#### Fox River

Apparently it was possible for boats to travel some distance on the Fox River. In 1908 the USGS, in a report summarizing knowledge its staff had acquired in numerous visits to the Seward Peninsula, stated that in "its lower 10 miles of its course [Fox River] has a very sinuous channel filled with sand and gravel bars, making the water shallow and navigation for small boats difficult." 661/ However, at least in its upper portions, its gravel bed facilitated wagon, rather than boat, traffic. In 1906 the Alaska Road Commission built a corduroy stage road from the East Fork Solomon River to Council. In its 1906 annual report the ARC stated that the Fox River was a "shallow" stream "running on gravel beds, with frequent dry-gravel bars, . . . easily fordable at any place in all ordinary stages of water." 662/ The road followed closely the route of the current Nome-Council highway.

### Klokerblok River

The village of White Mountain selected most of the Klokerblok River drainage as part of its ANCSA selection. The BLM's file on this selection contains no indication that anyone ever advanced the possibility that this water body was navigable. The State Director determined the river nonnavigable on October 23, 1979 and the bed of much of the river as far upstream as T. 9 S., R. 26 W., Kateel River Meridian transferred to Native ownership with the issuance of an Interim Conveyance on February 15, 1980. 663/

### KACHAUIK RIVER

On March 4, 1985, the BLM determined Kachauik River to be nonnavigable. The agency based its decision on interviews by its staff with Jim Magdance of the Nome Office of the Alaska Department of Fish and Game and Catherine Olson of Golovin, who had a fish camp at the river's mouth. Magdance stated that he spent the summer of 1982 camping at the mouth. He took a sixteen-foot Jon boat up the river an unstated distance. However, he told BLM's researcher that one to two miles up the Kachauik there were broad riffles barely passable with a jet motor. Olson described the river as very shallow, even near its mouth. She said that she and her husband had lined a boat up the water body an unstated distance; she said she knew it was not possible to take a boat above Eagle Creek. 664/

### CHEENIK CREEK

A colorful, and possibly totally fictional, 1960 reminiscence by Jed Jordan recounted a trip in the Cheenik Creek area in the gold-rush era. Mac Gulliver, a friend of Jordan, and four companions traveled on foot along the shores of Golovnin Bay in 1900. When they came to Cheenik Creek they found it running bank-full providing no chance to wade across. Gulliver spotted a tent and boat on the opposite side. The men yelled requesting the occupant to take them across. The man with the boat shouted back "My God, I've been packing people across here all day. . . . Do you think this is a ferry?" However, after one of Gulliver's threesome sent a couple 30/30 shots through the man's tent, they got their ferry ride and did not bother to pay \$2.50 each for the service. 665/

Cheenik Creek in T. 10 S., R. 22 W., and Sec. 18, T. 10 S., R. 21 W., Kateel River Meridian falls within the ANCSA selection for the village of Golovin. The BLM found no evidence indicating its navigability and on May 16, 1980 determined it nonnavigable. Golovin received Interim Conveyance on October 6, 1980. 666/

### KWINIUK RIVER

The State selected T. 10 S., R. 20 W., Kateel River Meridian which included part of Kwiniuk River near its headwaters. On May 13, 1983 the BLM made its determination for this township, declaring that the Kwiniuk was nonnavigable. 667/

### TUBUTULIK RIVER

For his 1983 study of culturally significant sites in the Norton Sound region, area Natives told anthropologist William Sheppard that they had a traditional summer fishing spot on the Tubutulik River at the confluence of Lost Creek. Sheppard does not explain how they accessed this place. 668/



In 1900 Walter C. Mendenhall with four others took three Peterborough canoes between sixteen and seventeen feet long up the Tubutulik River to map the area for the U.S. Geological Survey. They began paddling from the mouth on August 1 and left the flat area in its delta on the 4th. On August 7th they passed Chukajak Creek. A week later they reached "the lower end of a narrow canyon, through which the canoes could have been taken only with considerable difficulty." On an accompanying map the campsite for August 14 was shown approximately in Secs. 26 or 27, T. 5 S., R. 18 W., Kateel River Meridian. After doing some mapping of the surrounding hill country, Mendenhall's party began their downriver trip, probably on August 17. They reached the coast on the 19th. 669/

In 1906 another USGS expedition examined a potential overland route from Fairbanks to Council. The trail crossed the Tubutulik near Lost Creek (T. 5 S., R. 17 W., Kateel River Meridian). Here the river was "160 feet wide, from 2 to 5 feet deep, flowing over a gravelly bottom, [with a] current velocity about 3 miles per hour." The expedition's report stated that "the extreme high water rise of this stream is about 5 feet. Five hundred feet above the crossing is a ford with an average depth . . . of from 1 to 2 feet." 670/

In 1950 archaeologist James Louis Giddings sought in vain for archaeological sites along the lower Tubutulik River. Giddings secured the services of Mischa Charles and his boat and motor. Charles took Giddings from Moses Point "several miles" up the river. Along the way they stopped so Giddings could ask the Native families at their regular fish camps if they knew of archaeological sites or flint finds. 671/

#### KOYUK RIVER

Natives used kayaks and, possibly, umiaks on the Koyuk River before whites arrived on the Seward Peninsula. Dorothy Jean Ray in her study of the area's people quoted the Russian explorer Lavrentiy Zagoskin stating that the Eskimos of the Norton Bay area had contact with those in the vicinity of present-day Kotzebue via "the convenient portage" between the Koyuk and Kiwalik rivers. Zagoskin added that Natives "can take kayaks fairly far upstream, and erect fences on the banks for the deer hunt." 672/

Zagoskin did not know specifically where the portage or caribou fences were. The lowest divide between the Koyuk and Kiwalik is near the headwaters of First Chance Creek, though the pass via Sweepstakes Creek is only a couple hundred feet higher. 673/ William Sheppard, who conducted an ethnographic study of the region, including oral interviews, for a 1983 publication, learned of one possible caribou fence site along the river. It was near the mouth of the largest unnamed left-bank tributary in T. 5. S., R. 11 W., Kateel River Meridian. Sheppard's informants also spoke of a "late winter fishing site" used by Fish River Natives at the mouth of First Chance Creek and a Koyuk River summer fish site near the mouth of Willow Creek. 674/

In 1900 Walter C. Mendenhall led the first USGS expedition up the Koyuk River. He, topographer W. J. Peters, and three others began paddling three Peterborough canoes ranging between sixteen and seventeen feet up the river on August 23. They traveled nearly up to the East Fork in two days assisted by sails. The current was slack in this portion of the river. Mendenhall estimated that the tides affected the Koyuk for more than half of that distance. Mendenhall stated he covered forty miles in the first two days and the tides reached twenty-five miles inland. Above the East Fork the river became more sinuous and the current quickened to three miles per hour. In two days they traveled to within two miles of Willow Creek. On August 27 they continued upriver,

finding the current to be four miles per hour. Above Salmon Creek the river sometimes flowed at as much as five miles per hour. The evening of September 2 they camped about a mile above First Chance Creek. The next day the USGS party canoed up the boulder-strewn river to about a mile beyond Knowles Creek. They apparently remained a day at this camp.

On the 5th they passed the first noticeable rapids without difficulty. On the 6th they came to the foot of a succession of more serious restrictions in the channel. "For a few hundred feet the gradient of the river bed was very high and the channel filled with big blocks. . . . At times it was feared that it would be necessary to portage around these obstacles, but eventually the canoes were worked through with no more serious accident than the thorough wetting of all members of the party." That night heavy rains raised the river making travel still more difficult. On September 7 they cached some of their equipment. The next day they camped near a third set of rapids, apparently those marked on present USGS maps in T. 1 S., R. 21 W., Kateel River Meridian. The current through the three sets of rapids experienced since September 5 reached twelve miles per hour.

Mendenhall later reported that "light boats may be dragged" through these rapids. But on the 9th the USGS group ascended to a canyon "more conspicuous than any we had thus far seen." It was "entirely impracticable to take the canoes further." Therefore, they camped and mapped the surrounding area. This canyon appears to lie just above the unnamed slough connecting Olivine Creek to the Koyuk River in T. 1 S., R. 21 W., Kateel River Meridian.

The stormy weather which hindered their mapping in the next few days raised the river on the 13th so that it reached the men's tents. The next day the river subsided somewhat and the group started downriver. They found canoeing through the rapids exciting; they frequently shipped water. By September 18 they reached a camp five miles above the river's mouth. From there they canoed to Golovnin where they boarded a steamer to take them home from the season's work. 675/ Before leaving the country, though, they stopped at Nome. Here a local newspaper interviewed one of the men who stated that light-draft steamers could travel thirty miles up the Koyuk. 676/

Two months later the same newspaper carried another story of boating on the Koyuk. Charlie Murphy and six partners on a well-equipped prospecting expedition started up the river in September. Although the paper did not state they used a boat, such transportation is probable. They "followed the windings of the Koyuk for a considerable distance till we got right up to the foothills." He added that "the river winds a good deal and has many deceptive sloughs, but there is good timber and the traveling is not bad." They worked three creeks which they named Independence, Gold Run, and First Chance; on today's maps only the last is identified. 677/

In 1906 and 1909 other government parties entered the Koyuk drainage. In 1906 Alaska Road Commission engineer J. L. McPherson described the upper portion of Willow Creek after examining a potential Fairbanks to Council route. He found the creek near the mouth of an unnamed right bank tributary in T. 5 S., R. 14 W., Kateel River Meridian to be "a shallow stream" twenty to fifty feet wide. 678/ Philip S. Smith and Henry M. Eakin later reported that they traveled on foot and horseback in 1909. They observed that there was a strong current because of the tides as far as the Peace River and that the East Fork was "practically at sea level." 679/

Apparently prospectors, such as Murphy and his partners, failed to find rewarding placers on the upper river. But in the second decade of the twentieth century mining developed in the Dime Creek and Peace River drainages, with the settlement of Haycock, about six miles up Dime Creek, as its center. A trail led from Dime Landing on the

Koyuk to Haycock. According to the USGS's George L. Harrington, in 1917 "a number of small gasoline schooners, some of which made an effort to maintain a 6-day round-trip schedule, afford[ed] frequent communication between Nome, Golovnin (Cheenik), and [Dime] Landing." 680/

In 1982 Jack Mosby of the National Park Service led six others representing the Alaska Departments of Fish and Game and of Natural Resources, the village of Koyuk, and the Bureau of Land Management on a float trip down the Koyuk. Their purpose was to study the water body's potential for designation as a Wild and Scenic River. They used two thirteen-foot inflatable rafts. On June 29 they took an overflight of the river's headwaters in a helicopter. Mosby noted in his trip report that Caviar Creek contributed more water to the river than did the main river above Caviar's mouth. Mosby described the Koyuk above Caviar as "barely one to three feet wide and completely overgrown by dense willow and is not floatable." Although the river was "substantially higher" than when he flew over it in June 1981, Mosby decided that numerous rocks and the "relatively shallow water of the river (1'-4') made it prudent to put in at a gravel bar just below Knowles Creek.

They began their float the next day. About a half mile below Knowles Creek an unnamed tributary from the south in Sec. 28, T. 1 S., R. 19 W., Kateel River Meridian nearly doubled the Koyuk's size. Mosby described the river below this tributary as fifty to seventy feet wide and three to four feet deep with numerous shallows containing rocks three to five inches in diameter. Before stopping for the evening at Big Bar Creek they encountered "numerous riffles and boulder bars that require[d] pulling, lining and lifting the rafts around and through."

It rained hard all day July 1; the downpour propelled them rapidly down the river in the next four days. Mosby recorded that on the 1st they passed the last "rocky riffle" just above First Chance Creek and that the river widened to sixty to one hundred feet. On the 2nd the river at times rose about an inch an hour and the current continued to increase. In a thirty-six hour period Mosby estimated it rose five feet. Signs of human use, such as oil drums and cut logs and stumps, became evident near June Creek. On July 3 they floated to the mouth of Peace River, passing several "obvious fish camp sites." The river that day was one hundred to two hundred feet wide. The next day the group floated to Dime Landing. The July 1 rains still pushed them more quickly than would be normal down the river, though, as the river continued to widen, the current weakened. The group rode a riverboat to Koyuk from Dime Landing. When addressing the question of access, Mosby wrote that "power boat access is possible up to First Chance Creek." 681/

Joan Bee and Muriel Germeau of the Alaska Department of Fish and Game participated in this 1982 float on the Koyuk and submitted reports. Bee wrote that access to the headwaters was only by air and that the group had flown by helicopter to as close to the headwaters as possible and still find floatable water. At their put-in point the river was about thirty feet wide. She believed everyone in the party found the first twenty miles of their trip to have been the most exciting. According to Bee:

No paddling was required except for steering, as the current was swift and the slope of the downhill grade was readily apparent. Whitewater rapids with small standing waves and large, exposed boulders, and shallow rock-strewn riffles kept both raft crews busy. Occasionally a raft would become trapped between or on rocks, but it was possible to free the raft by getting out and shoving it around. In most cases, hip boots were sufficient when getting out to free the raft, but some locations did prove to be deeper than hip boot level.

Farther downriver the rapids dwindled to a "smooth, steady current." With the rains of July 1, the river rose at least five feet and maintained a flow rate of two to three cubic feet per second.

Bee noted no signs of human use until "after the halfway point." She recorded that Albert Charles, the Koyuk village representative, indicated this land was used during the winter for trapping, hunting, and ice fishing. Dog teams and snowmobiles accessed the area. The first inhabited dwelling they observed was at Dime Landing. The owner, Charlie Swanson, had lived there for about sixty years. Albert Charles mentioned that subsistence fishing for salmon and whitefish occurred in the Peace River to East Fork area.

Germeau gave more consideration to subsistence use of the Koyuk. She wrote that, "because of the boulders and shallowness of the river, scarcity of a large amount of wildlife, waterfowl, fish and berry patches," Natives did not ascend to the Knowles Creek vicinity. Germeau, apparently mistakenly, wrote that on June 30 they floated only to Nutmoyuk Creek (Mosby and Howard Smith, another participant, stated they went to Big Bar Creek). She noted that "we kept getting caught up between boulders or on top of them, and we had trouble with the shallow areas of the river." She stated that the area was trapped by villagers in the winter and added that "Koyuk people usually go through this part of the river to get to the Last Chance Creek area to hunt moose, caribou, fish (different species), and trap during the winter and spring seasons. However, they usually do not hunt or fish along this part of the river because the water is too shallow and rocky here." No Last Chance Creek exists in the Koyuk drainage. Germeau probably referred either to First Chance Creek or to a location along that creek called Last Chance where there was a cabin in the first decade of this century. In any case, both are downriver from Nutmoyuk and Big Bar creeks. Germeau recorded that below Nutmoyuk Creek the Koyuk people "hunt ducks, moose, and fish and gather greens and berries during different times of the year." On the fourth day floating, the swift current carried the party from the confluence of an unnamed stream in Sec. 28, T. 2 S., R. 16 W., Kateel River Meridian to Sec. 28, T. 3 S., R. 15 W., Kateel River Meridian in seven and one-half hours. Germeau observed a number of campsites used not only by Koyuk Natives to hunt, fish, and pick berries, but also by people from Kotzebue, Buckland, Elim, and Shaktoolik when the resources of their areas were lacking. She added that use increased near Dime Landing where resources were more abundant. 682/

The BLM's participant on this float trip, Howard Smith, wrote that "above the confluence with Caviar Creek the Koyuk is virtually nonexistent, being little more than a brushy line across the tundra." Of the first day's float to Big Bar Creek, Smith recorded that the river "contained lots of rapids and rocks, particularly in the section traveled this afternoon." He added that at the right water levels this stretch might be "a significant white water experience," but that at lower water lining and portaging would be necessary. They punctured their raft twice and several times got hung up on rocks. On July 1 they passed more rocks just below Big Bar Creek, but otherwise found the river wider, slower, and more gentle than the previous day. Because of heavy rains the river rose almost three feet that night; all the next day the Koyuk was high enough for riverboats to navigate. Although he had checked for potential archaeological sites his first two days on the river, he had not found any. On July 2 they passed some modern campsites. Signs of human activity became more frequent on the 3rd when they traveled from their camp in Sec. 28, T. 3 S., R. 15 W., Kateel River Meridian to the Peace River. Smith noted one cabin not cited in the others' reports; about five miles below the Peace River he saw a small cabin which Albert Charles said was that of Harry Napayonak of Koyuk. 683/

The National Park Service in June 1983 drafted a report on the Wild and Scenic potential of this river, based largely on the trip taken the previous year. It stated that from Caviar Creek to an unnamed stream entering the river in Sec. 28, T. 1 S., R. 19 W., Kateel River Meridian, the Koyuk was thirty feet wide and one to two feet deep. After receiving the waters of the unnamed tributary the river was sixty to seventy feet wide and two to four feet deep. As the Koyuk flowed to Dime Landing, its width increased to over 250 feet and its depth ranged between two to well over five feet. The National Park Service's report also described the river's bed. Above Knowles Creek it was "rocky with numerous stretches of exposed rocks (3"-8" diameter) and boulders interspersed with short (100-300 foot) pools." Below Knowles Creek rock-strewn riffles became less frequent, ceasing at First Chance Creek. In the lower third of the river, sand and silt composed the riverbed.

On one page the report indicated that riverboats could provide access up to Big Bar Creek or Nutmoyuk Creek "before rocky ledges usually prevent upstream travel." However, seven pages farther into the NPS study, the Koyuk was said to be "accessible by riverboat to a point just upstream of Big Bar Creek before numerous rocky ledges prevent easy upstream boat traffic." As for its floating potential, the report stated:

The river offers an easy flat-water float from a point just upstream of Big Bar Creek to Koyuk. Upstream of this point the river crosses numerous rocky ledges as the river gradient increases substantially. A four-mile stretch, just upstream of Knowles Creek, drops over 75 feet per mile. Sufficient water for paddling upstream of Knowles Creek, however, is usually present only through the middle of June or temporarily after heavy summer rains. 684/

The BLM has made determinations of navigability for the Koyuk River in conjunction with both Native and State selections. The Native village of Koyuk selected acreage along the river from the west end of T. 4 S., R. 13 W., Kateel River Meridian downstream. Robert Cordell of the BLM obtained information from Koyuk and Dime Landing residents, particularly Dennis Adams and Oscar Swanson, to fill out navigability forms on the river in April 1977. Cordell stated that sandbars were numerous in the selection area above river mile 25. Meandering increased above Dime Landing and the tides extended somewhat above that settlement. He recorded that barges reached Dime Landing in May and June and that fourteen- to twenty-two-foot boats ascended to some point above the landing. That December the Fairbanks District's easement staff urged that the river be determined navigable within the selection area to Dime Landing. However, for reasons the BLM's records do not make clear, a Notice of Proposed Easement Recommendations distributed in November 1979 listed the Koyuk as navigable throughout the selection area as did the final easement memorandum of February 26, 1982. 685/

Three Fairbanks District Office reports for State selections concluded that portions of the upper Koyuk River were nonnavigable. Keith H. Woodworth drafted two of these reports on August 31, 1979 addressing the river between T. 1 S., R. 18 W., and T. 2 S., R. 16 W., Kateel River Meridian, inclusive. His information came primarily from his own field examination on August 29, 1979 and from conversations with David Scott of BLM's Arctic-Kobuk Resource Area. Woodworth described the river as 70 feet wide at Dime Landing, 30 to 40 feet wide where the river passes into T. 3 S., R. 16 W., Kateel River Meridian, and 15 to 20 feet wide at its confluence with First Chance Creek. Depth in the selected townships ranged between six inches and six feet. Sand and gravel bars were common. Woodworth noted that barges traveled to Dime Landing and that "very shallow-draft river boats" could ascend to First Chance Creek. However, "During years of low water, this portion is difficult to travel. Above First Chance Creek, the river is normally impassable due to numerous sand bars and riffles." The State Director

concurred with these navigability recommendations on September 17 and September 18, 1979. In 1982 the District prepared another report pertinent to selections in T. 1 S., Rs. 19-20 W., Kateel River Meridian. In it that office stated that, "Shallow water precludes navigability much above the junction with the Peace River" and that Natives "travel as far as First Chance Creek by riverboat for subsistence hunting and fishing." It went on to conclude, and the State Director later concurred, that the Koyuk was nonnavigable in the two selected townships. 686/

#### Peace River

Robert Cordell of the BLM collected information concerning the navigability of Peace River in 1977 in connection with the conveyance of land near its mouth to the Natives of Koyuk. Henry and Dennis Adams of Koyuk stated that Natives occasionally used fourteen- to twenty-two-foot riverboats for subsistence, but that the river was quite shallow and difficult to navigate except at "optimum periods of discharge." The BLM gathered no more information supporting the tributary's navigability and on February 26, 1982 the State Director determined the Peace River nonnavigable in T. 4 S., R. 13 W., Kateel River Meridian. The BLM's Fairbanks District Office also recommended the river be considered nonnavigable in State-selected Tps. 1-2 S., R. 12 W., and T. 1 S., R. 11 W., Kateel River Meridian, a recommendation in which the State Director concurred on September 17, 1979. 687/

#### East Fork Koyuk River

The BLM considered the East Fork's navigability in the process of conveying Secs. 19-20, T. 4 S., R. 11 W., Kateel River Meridian to the village of Koyuk. In a Notice of Proposed Easement Recommendations dated November 21, 1979 the agency did not consider the stream navigable, but stated that it was tidally influenced to Sec. 20. Nearly two years later Martin Karstetter and other BLM representatives attended a Koyuk village meeting where they learned that the local corporation believed that the East Fork was navigable. Karstetter later recorded that a prospector in the summer of 1981 had taken an eighteen-foot skiff with a twenty-five-horsepower motor up to the confluence of "the North Fork of the East Fork," a stream unnamed on USGS maps which Karstetter stated was upstream of the Candle (A-4) quad map. Karstetter learned that villagers boated up this far for moose hunting. Jim Culbertson of the State was also at the meeting and later noted that the State and the village and regional Native corporations urged BLM's acceptance of the East Fork as a navigable stream. Based upon Karstetter's memorandum, the BLM's Navigability Unit recommended that the agency find the fork navigable through the selection. This the State Director did in an amended final easement statement on March 10, 1982. The BLM issued an Interim Conveyance for the land on December 27, 1982. 688/

The agency also examined the fork's navigability in T. 3 S., R. 10 W., Kateel River Meridian in the process of conveying lands in the township to the State. On August 30, 1979 Keith H. Woodworth of the Arctic-Kobuk Resource Area submitted a report stating that the previous day under high-water conditions the East Fork was no more than fifteen feet wide and four inches to two feet deep. The channel was narrow and gravel bars numerous. Downed trees and sweepers blocked its lower portions. Woodworth recommended the water body be considered nonnavigable. The State Director concurred in this recommendation on September 17, 1979. 689/

#### AKULIK RIVER

The BLM considered the navigability of the Akulik in the course of conveying land to Koyuk under ANCSA. On April 4, 1977 Robert D. Cordell of the agency described the

river. He stated that in its lowest ten miles it tended "to shallow and extend into marsh lands--beyond mile 10 [the] river is surrounded by moderately elevated rolling hills." Its depth ranged between one and ten feet. Henry and Dennis Adams of Koyuk told Cordell that the river was shallow and was used in eighteen- to twenty-two-foot boats only up to its confluence with a slough of the Inglutalik River. Local residents visited the river primarily for duck and goose hunting in the fall. However, the Akulik was not considered navigable in T. 7 S., R. 11 W., Kateel River Meridian in either the final easement statement of February 26, 1982 or in the Interim Conveyance of December 27, 1982. 690/

## INGLUTALIK RIVER

Natives traditionally traveled on the Inglutalik River. In the course of Western Union's examination of a telegraph route to Europe through Alaska and Siberia, an Eskimo guide told R. D. Cotter that Natives went up the Inglutalik in umiaks for forty miles to fish. The estimated forty miles brought them to a tributary from the northwest which was about a third the size of the mainstream. 691/

William L. Sheppard, an anthropologist, gathered ethnographic data, including oral histories and documented use, for a 1983 study of historic sites in the Norton Sound area. He concluded that traditional caribou hunters paddled kayaks to the mouth of a left bank tributary near the intersection of Secs. 19-20, 29-30, T. 6 S., R. 9 W., Kateel River Meridian to shorten their trip to the head of the Ungalik River. They cached their kayaks on crossed-pole frames near the Inglutalik and hiked inland. This "kayak place" was a good one to cache the boats "because water travel further up the Inglutalik was strenuous and time consuming and because the site was directly west of a low-elevation corridor leading to the Ungalik River." 692/

The USGS in 1909 dispatched Philip Smith and Henry Eakin to lead an overland party to survey the geology of the Norton Bay to Nulato area. They described the Inglutalik as sixty or more miles long, having more water than either the Shaktoolik or Ungalik rivers. They found that in the first half of July the river's first riffle above its mouth was near the mouth of an unnamed stream in Sec. 1, T. 8 S., R. 10 W., Kateel River Meridian. This riffle provided a "good crossing in about two feet of water;" below it they could not ford the Inglutalik. Their report also stated that poling boats had gone up to the mouth of Kilusiktok Creek (T. 3 S., R. 5 W., Kateel River Meridian). In late July or early August the USGS party was at the mouth of this creek. The resultant report surmised that "during seasons of normal precipitation [poling boats] could undoubtedly be worked still further upstream." 693/

The BLM considered the Inglutalik's navigability in the process of conveying land to the village of Koyuk. On April 4, 1977 BLM's Robert D. Cordell drafted a report on its navigability based upon information provided by David Scott of the Arctic-Kobuk Resource Area and Henry and Dennis Adams of Koyuk. Subsistence users frequented the lowest nine miles which lie in a marsh area. The informants indicated that "sand bars preclude general use of 18-22 foot river boats. . . much past Sec. 36, T. 7 S., R. 10 E., Kateel River Meridian." This statement corresponded roughly to that of Sankie Charles of Koyuk. At the request of Sherman F. Berg of the BLM's State Office navigability staff, David Scott had contacted Charles in late February 1980. Charles boated on the river up to his Native allotment. He explained that flat-bottomed riverboats could ascend the Inglutalik about fifteen miles. Not many people traveled on the river, but those that did generally confined their activity to "an area of commercial berry picking." In view of this information the BLM found the Inglutalik nonnavigable in T. 7 S., Rs. 10-11 W., Kateel River Meridian. 694/



## UNGALIK RIVER

In the summer of 1906 Alaska Road Commission engineer J. L. McPherson led an expedition to survey a land route from Fairbanks to Council. The route McPherson recommended in a 1907 report, followed the Ungalik River for about thirteen miles below an unnamed left bank tributary with its mouth in either T. 5 S., R. 4 or 5 W., Kateel River Meridian. McPherson described the Ungalik as fifty to 150 feet wide, one to four feet deep, with a gravel bottom. The route crossed the river one to two miles below the unnamed tributary. 695/

In 1909 the USGS's Philip S. Smith and Henry M. Eakin led a reconnaissance of the Nulato to Norton Bay region. Traveling with horses from the east, they reached the Ungalik near a left bank tributary with its mouth in Sec. 8, T. 11 S., R. 10 W., Kateel River Meridian in early July. They then traveled north and crossed from the Ungalik to the Inglutalik drainage via an unnamed right bank stream flowing into the Ungalik in T. 9 S., R. 10 W., Kateel River Meridian. Smith and Eakin's report stated that the Ungalik was larger than the Shaktoolik. About two miles below the first mentioned unnamed tributary they found they could cross the river in less than two feet of water. The report continued, stating that:

farther upstream it was still shallower except for occasional deep holes. Lower downstream, however, in the coastal plain portion of its course, it becomes deeper and sluggish, and instead of a hard gravelly bottom it has a soft mud bottom that makes crossing difficult without a boat. 696/

The BLM addressed the navigability of the lower Ungalik River while processing ANCSA conveyances for the village of Shaktoolik. The village selected T. 11 S., R. 11 W., Kateel River Meridian which includes the lowest seven to eight miles of the river. Placer mining operations have modified the channel in the upper two miles of the river in this township. In an April 1977 report on the river Robert D. Cordell of BLM stated that local Natives rarely used the Ungalik and that the most common boat on the river was fourteen feet long or less and equipped with a jet. But when the Fairbanks District's easement staff met that December, it did not consider the river navigable. Furthermore, it rejected a streamside easement along it noting that the Ungalik received little use and that the "river is considered by locals and those familiar with the area to be unsuitable for normal travel via boat either outboard or jet." Yet, the BLM's Carol Shobe in January 1980 learned that other agency employees had floated the river the previous summer and had encountered no impediments in the river for about its lowest thirty-four miles. The next month the State Director signed the final easement statement naming the Ungalik as a major but nonnavigable waterway. The Decision to Issue Conveyance circulated the next month also considered the river nonnavigable. 697/

The BLM's positions opposing an airfield easement requested by Patrick Bliss, a miner on the Ungalik, and on the river's navigability aroused objections bearing on the stream's navigability. On the last day of February 1980 Bliss met with BLM's staff. He rejected the agency's position that the Ungalik provided an alternate access to public lands. He stated, "that the river was very shallow and that a boat could not travel up the river, except during periods of spring run-off. . . . He said that during periods of high water, boats could travel to a point six or seven miles above the mining claims. However, the normal level of the water was three to six inches deep, except in areas where there were deeper holes. Mr. Bliss said that he could easily walk across the river with normal 8-inch size leather boots, without getting his feet wet." 698/



The State protested the finding that the river was nonnavigable. State Land Management Officer Dennis Daigger based his protest largely on the testimony he gathered from Harold Ivanoff, who at one time lived at Shaktoolik. In 1936 or 1937 Ivanoff agreed to transport Frank Shaw's two-and-one-half-foot dredge up the river from the coast. Using a twenty-foot dory and a twenty-horsepower outboard motor, he was able to take about a ton each load up to a point between Willow and Christmas creeks. Ivanoff fulfilled the contract. He found no obstructions to his travel, though there were several stretches over which he had to drag the boat. The State urged the BLM to reverse its position, a step the agency took on February 18, 1983. 699/

#### SINEAK RIVER

Under ANCSA, Shaktoolik selected all of Sineak River and the BLM considered its navigability. According to the agency's Robert D. Cordell, who spoke with nearby residents, few people had any need to travel this shallow stream. The Fairbanks District easement staff, when it met in December 1977, did not believe it merited being termed a navigable stream. The agency maintained this stance in its final easement statement of February 4, 1980. 700/

#### SHAKTOOLIK RIVER

Philip S. Smith and Henry M. Eakin of the USGS led a 1909 reconnaissance of the Nulato to Norton Bay region. Traveling with horses from the east, they crossed from the Gisasa River drainage into that of the Shaktoolik on July 5. They traversed the Brass Pan Creek drainage into that of Kingmetolik Creek. The USGS group followed this stream back to the Shaktoolik and continued down the river to south of Christmas Mountain, from whence they hiked west into the Ungalik drainage.

On their journey, the Smith and Eakin party made rough estimates of river flow. On Kingmetolik Creek near the tributary entering in Sec. 36, T. 10 S., R. 8 W., Kateel River Meridian, they found the discharge to be between 150 and two hundred second-feet. Kingmetolik Creek and the Shaktoolik had about equal volumes at their confluence. And even in the "exceptionally dry season" of 1909, they found that about July 10 below a tributary just north of directly east of Christmas Mountain, the amount of water "had increased to such an extent that the stream could be crossed only with difficulty." 701/

The federal Bureau of Education contracted with Natives to build and furnish a schoolhouse on the Shaktoolik in 1912. The builders completed the school near one or more Native homes twenty to twenty-five miles upriver in March 1913. Natives erected more cabins around the school so that there were twelve log structures by the end of 1914. However, that winter the Natives became disgruntled with the site. It was too far from the coast for seal hunters and all the good trees for building were downstream; rafting them upriver was arduous. Therefore, the villagers rafted their homes down to a new site on the north side of the Shaktoolik fifteen river miles from the coast in the late summer and early fall of 1915. They moved the school down to the relocated village the next year. 702/

The Bureau's records also indicate the watercraft in use in the area. In 1916 or 1917 an agency teacher built "a good river boat" to visit reindeer stations and haul supplies up to Shaktoolik. In mid 1918 the local teacher took a census of the village. He noted that the ninety Natives had nine wooden boats, a skin boat, a nineteen-ton sailboat, and a five-ton powerboat with a ten-horsepower motor. 703/

Other sources provide limited and indirect evidence of river travel. Clarence Andrews visited the mouth of the Shaktoolik in the 1920s and noted that a rowboat came down the river while he was there. 704/ This boat may have come down from the village of Shaktoolik, which has relocated more than once this century. In the early 1930s the settlement was three to five miles up the Shaktoolik, though residents were then considering moving to the coast because the river was cutting away at the shore, undermining their homes, and because of the added freighting costs involved with living up the river. 705/ United States Geological Survey maps make it clear that Natives continued to utilize at least the lower stretches of the river. The 1972 revised version of the USGS's 1955 map marked about a dozen structures on the river, referring to at least some of them as "Fishing Camps." The cabin shown farthest upstream on the river was in Sec. 8, T. 13 S., R. 10 W., Kateel River Meridian. 706/

The village of Shaktoolik's ANCSA selection included the course of the river by the same name up through Sec. 11, T. 13 S., R. 11 W., Kateel River Meridian. In 1977 the BLM's Robert D. Cordell examined the river's navigability, gathering much of his information from villagers. Cordell reported that sandbars were abundant between river miles 3 and 20 and that in August the river was two to ten feet deep. Low water came in mid summer. Tides affected the river about one mile above the abandoned former site of Shaktoolik and Shaktoolik Roadhouse in Sec. 7, T. 13 S., R. 12 W., Kateel River Meridian. Fourteen- to twenty-two-foot skiffs ascended the river; Cordell noted that jet-powered boats appeared most effective, though propeller craft also traveled the river. In late 1979 the Alaska State Office's Branch of Lands and Minerals recommended the agency determine the Shaktoolik navigable in the selection area, citing it as the primary route of summer travel to fish camps and hunting and trapping areas. The State Director made his determination based upon this recommendations on February 4, 1980. 707/

#### **TAGOOMENIK RIVER**

The Tagoomenik River up through T. 13 S., R. 11 W., Kateel River Meridian lies within Shaktoolik's ANCSA selection. The BLM examined the navigability of the streams in the selection and on February 4, 1980 issued a final easement memorandum which determined the Tagoomenik to be nonnavigable. 708/

#### **EGAVIK CREEK**

In May 1900 Dr. Francis H. Gambell, superintendent of a reindeer herd then feeding north of Egavik Creek, required a raft to cross the creek near its mouth on his way to Unalakleet. A Native settlement occupied the left bank at the mouth of this stream from at least the 1860s to the mid-twentieth century. 709/

The BLM addressed the navigability of Egavik Creek up through T. 16 S., R. 11 W., Kateel River Meridian in the course of conveying land to the village of Unalakleet pursuant to ANCSA. In August 1975, BLM representatives attended a village meeting where they learned that "small skiffs" could ascend the creek two to five miles. In January 1978 Rhett Wise, a BLM realty specialist, recorded that the creek was as little as six feet wide and its course choked in places with beaver dams and logs. A month later the easement staff met and stated that the creek was tidally influenced to Sec. 32, T. 16 S., R. 11 W., Kateel River Meridian, but nevertheless recommended a streamside easement to this section because the stream's narrowness and vegetation sometimes made shore access necessary to maneuver a boat. A second easement staff meeting on March 14, 1979 dropped this easement, however, because it was at odds with new regulations. In May 1980 BLM employees returned to Unalakleet to meet with villagers, who stated that Egavik Creek was tidally influenced only to the east boundary of Sec. 1, T. 17 S., R. 12 W., Kateel River Meridian. That December when BLM issued its final

easement statement for the Unalakleet selection it stated that the creek was nonnavigable and was silent on the extent of tidal effect. The Interim Conveyance issued March 29, 1982 reflected these decisions. 710/

BLUEBERRY CREEK, POWERS CREEK, TAKET CREEK, SUMMER CREEK, JESSE CREEK, COAL MINE CREEK, CASCADE CREEK, GLACIER CREEK, POINT CREEK, SPRUCE CREEK, POKER CREEK

All the above streams are short and reach Norton Sound within the Unalakleet ANCSA selection area. The first two are north of the Unalakleet. Throughout the conveyance process BLM apparently did not seriously consider designating any of them as navigable. On December 18, 1980 the State Director decided that all of them were nonnavigable. 711/

#### UNALAKLEET RIVER

Russian Lieutenant Lavrentiy Zagoskin chronicled the earliest documented travels in the Unalakleet River drainage. He first visited the mouth of the river from his base in St. Michael in the fall of 1842 and in the following December he began a dog sled trip to the Yukon River with Natives' assistance. On the 30th he started up the river. He did not record how far he traveled the first day, but covered seven miles on the 31st. That evening Zagoskin stopped near an abandoned summer village. An unstated distance upstream from this place was a winter portage route that, according to Zagoskin, the Russian explorer Glazunov had taken in 1837. According to a map accompanying Zagoskin's report and to the report's American twentieth century editor, Henry N. Michael, this route must have followed up the valley of Old Woman River. However, Zagoskin's report also stated that he traveled nine more miles on January 1 to reach the Indian village of Ulukuk, which the editor indicated to be near the mouth of Old Woman River. At any rate, Ulukuk was both a summer and winter village for Ingalik Indians who occupied and jealously guarded the portage route because of its strategic trading importance. From this village Zagoskin continued sledding across tundra in a northeasterly direction to the Yukon. 712/

In the mid-1860s explorers for Western Union's telegraph project crossed the Kaltag Portage, as the route Zagoskin took came to be called, numerous times. These expeditions were in the winter, but collateral to the winter excursions the Western Union parties also paddled up the Unalakleet in summer. In early October 1865 George R. Adams, Ivan Luken, and an Indian traveled in a three-hole kayak to "the settlements of the Ingalik nation, on the banks of the Ulukak [sic] River." Unfortunately, the location of their Ulukak River is no clearer than Zagoskin's village of Ulukuk. 713/

The following two years William H. Dall traveled along the Unalakleet in the interest of Western Union. He first reached the mouth of the river from St. Michael in November 1866. He learned that:

The mouth of the Unalaklik [sic] River is obstructed by a bar, over which at low tide there is only a few feet of water, except in a narrow and tortuous channel, which is continually changing as the river deposits fresh detritus. Inside of this bar we get two or three fathoms of water for a few miles, but the river has only a few feet in the channel, most of the summer, from the mouth to Ulukuk. The tide-water comes up a mile or two.

Elsewhere in his book on his experiences in Alaska, Dall stated that "in high water not more than four feet can be obtained as far as Ulukuk. During the period of low water in the fall, only skin boats can ascend it." 714/

In 1867 Dall and three others traveled by umiak to Ulukuk, which he indicated was thirty-three miles from Unalakleet traveling in a straight line, but more than double that distance following the twisted river. They left Unalakleet October 3. The current was "very strong and the water low." Their umiak when loaded drew one and one-half feet; they had "occasional difficulty" in crossing the sandbars. On the morning of the 4th Dall and his companions reached the village of Iktigalik, where he found many Ingalik Indians anxious to travel with him to Ulukuk. But ice was beginning to form in the river, so Dall pushed on with all his energy. He reached Ulukuk on the morning of the 6th. Dall was in such a hurry to beat winter back to Unalakleet, that he almost immediately began his return downriver. He reached Iktigalik that evening. The next morning at 9 o'clock Dall and the three others resumed their travels, arriving at Unalakleet at 2 o'clock. Halfway down from Iktigalik they came upon a three-hole kayak which a Nulato Native and two others had "left on the shore when they struck across the summer portage." Dall thought the kayak might prove useful and took it aboard his umiak. 715/

Some of the earliest western missionaries in interior Alaska also used a umiak on the Unalakleet River. In late July 1877 Bishop Charles J. Seghers and another cleric hired four Natives, rented a umiak, and paddled up to Ulukuk. From there they proceeded overland to the Yukon River. 716/

In 1885 Lieutenant Henry Allen traversed a "very little used" summer portage from the Yukon River to the Unalakleet River in his exploration of Alaska. On August 23 he and his companions and an Indian guide set out on the portage from a point three miles up Bear Creek. They traveled in a north-northwesterly direction, reaching the village of Ulukuk about noon August 26. Allen's map of this portage left a good deal of accuracy to be desired. Still, it appears to indicate that Ulukuk was at the mouth of Old Woman River. The settlement lay between "two tributaries about equal in size." Allen described the villagers' summer mode of transportation as "small birch canoes, any two of which would have been insufficient to carry our party, together with dogs." Therefore, they bought two canoes out of which they fashioned a catamaran by lashing them together about a foot and a half apart. They descended the Unalakleet for the next two days, frequently stopping to repair their craft. Allen described the river as having "a current of about 4 miles per hour notwithstanding the very meandering course of the stream. . . . As the coast is approached the river becomes wide and the current sluggish." 717/

William Sheppard, who conducted an ethnographic study, including oral interviews, for a 1983 publication on the region, proposed another location for Ulukuk. He noted that the Ingalik Indians denied the Unalakleet Eskimos access to the upper part of the Unalakleet until the early twentieth century. Subsequently, though, the Eskimos ascended as far as "Uluksraq," an "Athabaskan settlement" in the vicinity of Stove Creek, to fish during the summer. Most of their summer fishing sites were below Chirokey River with an especially large concentration in the river's lowest eight miles. 718/

Near the turn of the century whites boated along the river, many pursuing domestic reindeer herding. In his report for 1900 on the introduction of reindeer into Alaska, Sheldon Jackson wrote that reindeer herd employees spent much of the fall freighting supplies eight miles up the river from the coast to the Eaton station. Later in the report Jackson referred to using rowboats between the station and the mouth of the river to transport eleven Lapp families with their baggage to the coast where they boarded a ship for their home land. 719/ Two years later on July 7, 1901 the reindeer herders started up the river with provisions in the Gladys, a boat not described in Jackson's report. Low water prevented the boat from reaching its destination. While on the river, they noted two miners on their way to the Yukon. The reindeer herders succeeded in taking the

Gladys to their camp, though they had to wait until the rains came. On August 4 a cutter and the station's boat came up to the station and a steam launch came within two miles of the station before running aground. 720/

Adolphus W. Greely's 1909 and 1924 editions of Handbook of Alaska stated that the Unalakleet was navigable by poling boat. Greely did not give his basis for making this assertion. 721/ In 1926 the U.S. Coast and Geodetic Survey described the mouth of the river. It stated that a shoal extended about one and one-half miles from the mouth and that there was no channel through the shoal for any boats larger than "light-draft craft." 722/

In 1961 Sara Machetanz published The Howl of the Malemute which recounted some of her and her husband Fred's activities at Unalakleet in the 1950s. One October they traveled by powerboat up to the Chirokey River to cut a supply of firewood. Machetanz wrote that the Unalakleet, "always difficult to navigate, was even more so now. As feeder streams froze, the water had become shallow and the channel more narrow." She stated that prior to outboard motors, Natives had lined their boats up the Unalakleet. She estimated the Unalakleet's current to be three miles per hour. On the way up the river they passed two boats crammed with people, dogs, supplies and equipment returning from their fish camp. After cutting their logs they constructed a raft, lined it down the Chirokey, and floated down the Unalakleet, occasionally hanging up on river bars. 723/

In July 1972 Kenneth Alt and Gene Roguski, both fisheries biologists for the ADF&G, vacationed at Henry and Agnes Breedlove's lodge six miles up the Unalakleet River. They spent several days boating in one of the lodge's sixteen-foot motor boats above and below the lodge. They traveled at least five miles above the lodge in the boat. The two observed Native fish camps and noted no obstructions to their travel. 724/

By the mid-1970s government agencies began examining the Unalakleet. The State of Alaska's Division of Planning and Research issued a report in 1974 stating that, "although motorboats can travel nearly 60 miles upstream, most use occurs in the lower 20 to 30 miles of the river." 725/

The Bureau of Outdoor Recreation examined the river to discover its Wild and Scenic River potential. David Dapkus of the agency led a group comprised of John Nye and David Scott of the Bureau of Land Management, Tom Young of the Alaska State Highway Department, and Vernon Kutzeg of the Bering Straits Regional Corporation on an inspection of the river in early June 1973. Dapkus hired John Ivanoff of Unalakleet to guide them upriver. On June 5 they started upriver with two eighteen-foot riverboats with propeller motors. The river was fast and high due to lingering winter melt-off. That night they camped on a gravel bar five miles below Old Woman River. The next morning they attached jet units to their motors in place of the props "because of shallow water." They continued to "near Tenmile River [sic]." Dapkus described the Unalakleet above Old Woman River as "shallow, narrow, and extremely winding" with riffles which become more numerous as the water level drops during the summer. He considered all the river class I on the international white water scale. On June 7 the men returned to Unalakleet. Dapkus concluded that the Unalakleet was suitable for canoes and small rafts, though such users should be prepared for log jams across the entire river above Old Woman River and sweepers for nearly its entire length. He wrote that "there is only helicopter access to the upper reaches of the river. The best method of access to the upper river is by hiring a person from Unalakleet to take you by riverboat. It would take 2 days (riverboat) to get to the vicinity of Tenmile River, then 5 days to float back to the village." 726/

The Department of the Interior's Proposed Unalakleet National Wild River Alaska: Final Environmental Statement described the Unalakleet as a "90-mile, clearwater, free-flowing, intermediate sized river." From the upper to the lower limit of the proposed Wild and Scenic portion of the stream (ie. from about the east border of T. 14 S., R. 4 W., Kateel River Meridian to T. 18 S., R. 8 W., Kateel River Meridian) the river broadens from 50 to 60 feet to 300 to 400 feet wide. Depths "are moderately shallow ranging from 2-10 feet deep in most places." Peak flow is after breakup in late May or early June, though rain-induced high water may occur in late July or early August. The report stated that "water riffles and shallow places are generally confined to areas above Old Woman River. Upstream boat navigation is sometimes limited depending on seasonal water fluctuations. . . . Below Old Woman River, the Unalakleet is generally placid."

This report made other more direct statements on watercraft use on the Unalakleet. It explained that part of the reason for limited recreational use was that:

upstream access is difficult and costly due to shallow river conditions during certain times in the summer that limit powerboat travel. . . . Floatplane access is limited to a few straight stretches with deep water in the lower river up to Old Woman River during periods of favorable water and weather conditions. Air access above Old Woman River is believed possible only by helicopter.

Nevertheless, the report stated that the Unalakleet was large enough "for extensive powerboat use." With favorable water conditions powerboats could ascend to Old Woman River, though Unalakleet residents used motorboats extensively on only the lower two-thirds of this stretch for subsistence hunting and fishing. The report concluded that, while there was no current use by raft, canoe, and kayak, field inspections showed that there was sufficient water for an enjoyable float through the entire proposed Wild and Scenic River section. 727/

Kenneth Krieger and James Humphreys provided more detailed information about the Unalakleet in a BLM report following their study of the river from June 24 to August 24, 1975. They traveled in a twenty-foot Mon-Ark riverboat powered by a forty-horsepower jet motor or a thirty-three-horsepower Johnson outboard. With this outfit they were able to survey an area up to within two miles of Tenmile Creek. They found the Unalakleet up to the mouth of the North River to be "a continuous slow flowing body of water" 250 to 500 feet wide. Two to 15 feet of water coursed over a predominantly silty bottom. From the North River to the township line common to T. 19 S., Rs. 9-10 W., Kateel River Meridian half- to three-inch gravel covered with silt composed the bottom. The river narrowed to 175 to 250 feet; the average was 225 feet. The depth ranged from 1 to 15 feet, though 8 feet was the average. There were four deep pools and eight riffles. Farther up to the Chirokey River the bottom and depth conditions remained the same, except that the average depth dropped to six feet. The average river width dropped to 175 feet. Krieger and Humphreys estimated the pool and riffle ratio at 95:5.

In T. 18 S., R. 7 W., Kateel River Meridian the Unalakleet is considerably braided. Krieger and Humphreys described the river up to this stretch from Chirokey River as "mostly slow moving deep water with riffles appearing during low water." The depth was 1 to 9 feet, 6 feet being the average. The width varied from 100 to 200 feet. From the braided area up to the North Fork, 2- to 4-inch gravel composed most of the bottom. The river narrowed to an average width of 80 feet. The depth ranged from 6 inches to 10 feet. The average was 5 feet. Krieger and Humphreys counted twenty-eight pools and

about the same number of riffles. Farther upstream to Old Woman River the river widened again to 100 to 200 feet and deepened to an average depth of 6 feet, though in some places the depth dropped to 4 inches. For the lowest third of this stretch the pool to riffle ratio was 80:20. In the middle third it was 50:50 and in the upper third the ratio was 30:70. Above Old Woman River to a point a couple miles below Tenmile Creek they found the river to be 30 to 150 feet wide; 60 feet was the average. The depth was 3 to 10 feet, with 4 being the average. There were three riffles for every pool. 728/

Krieger and Humphreys discussed access and watercraft use on the Unalakleet. A sandbar about a mile below the Chirokey River provided one local pilot access to his cabin. The authors stated that "this is believed to be the farthest upriver a wheeled plane can land." Their report went on to state that "floatplanes have numerous access sites below the braided area [T. 18 S., R. 7 W., Kateel River Meridian] . . . and none above the braided area." 729/

The report indicated that power-boating up to Chirokey River was good since the river was slow with "mostly deep water during most of the year." However, Krieger and Humphreys recommended a jet unit in low water for those unfamiliar with the river. From the Chirokey to the braided section the Unalakleet was deep, slow, and excellent for motorboats. From the braided segment to Tenmile Creek, power boating required a jet unit for those unfamiliar with the river and at any time except high water. The segment from the braided area to the North Fork consisted of several channels and constituted "the most difficult and dangerous area of the main river observed for use with a boat." The report also stated that "a very experienced jet unit operator would be necessary to reach the upper river sections during periods of low summer water. A float trip by raft, passing through the entire wild river corridor, would be possible only with the aid of a helicopter. Even at the very highest water levels, it would probably not be possible to see the entire wild river corridor by means of a riverboat." There were many snags in this part of the river which also exhibited fast flowing riffles and some slow water. Canoeists would find some challenging places there; farther downriver canoeing would be slow and easy. 730/

Krieger's and Humphreys' report also addressed their observations of river use. In their two months on the river they noted twenty-four people, all Unalakleet residents, in eight parties. They estimated that 281 villagers participated in summer or winter fishing on the river; most fishing occurred during the summer. They put the number of hunters at 329. Some of these would boat up and down the river looking for moose on the banks. Krieger and Humphreys estimated that 256 people picked berries along the Unalakleet. They also noted eighteen permanent structures by the river below the projected Wild River Corridor and eleven others in the corridor. The latter included Old Woman Cabin, a deserted cabin on the Iditarod trail near the mouth of the river by the same name; a defunct mink farm two miles below the braided section; and "what appears to be the remains of two pre-1900 Indian villages" two and four miles below the braided segment. 731/

The BLM determined portions of the Unalakleet to be navigable in conjunction with a Native selection and with the Wild River Corridor established to protect its future use. The village of Unalakleet selected lands encompassing the river up through T. 18 S., R. 9 W., Kateel River Meridian. On December 18, 1980 the BLM's State Director determined the river navigable through the selection area, noting that it received significant current boat traffic. 732/

The BLM gathered specific information concerning the river's use when it made navigability determinations for the Wild River Management Plan. Virginia L. Hokkanen,



an Anchorage District Office realty specialist, drafted a report dated January 3, 1983 upon which the BLM based its recommendation. Hokkanen noted that above Tenmile Creek, the Unalakleet's width varied from 50 to 93 feet and its depth was up to 5 feet, though it averaged less than 2 feet. She examined three Native allotment files concerning holdings on the river in Secs. 6-7, T. 18 S., R. 7 W., Kateel River Meridian. The files did not state how the claimants reached the land. They hunted and fished. Two of the three trapped and two had cabins. Their use dated from as early as the 1930s.

Hokkanen also interviewed federal and State employees concerning the river. David Kelley of the Anchorage District Office floated unspecified portions of the river in 1981 and 1982. He believed a sixteen- to eighteen-foot skiff with a twenty-five to fifty-horsepower motor could ascend as far as Old Woman River. A logjam near that point would hinder further travel. Without the logjam, Kelley stated that such a skiff could reach Tenmile Creek. Dave Dapkus recounted his 1973 trip and added that he had floated from a point about five miles above Tenmile Creek in 1982. He believed he could have powered an eighteen-foot semi-V riverboat up this same stretch. Dave Mindell of the ADO told Hokkanen that in 1979 he took an eighteen-foot skiff with a thirty-five-horsepower motor up to Old Woman River. Another ADO employee, hydrologist Ron Huntsinger took a sixteen-foot boat with a forty-horsepower motor up the river to Old Woman River in August 1982. He could not proceed further because of a logjam. Finally, Hokkanen got information from two ADF&G employees. Charles Lean went up to a point halfway between Chirokey and Old Women rivers in 1981 with a twenty-one-foot Boston Whaler powered by twin seventy-horsepower motors and stated he thought a jet boat could ascend to Tenmile Creek. Don Peterson, also of ADF&G and a seven-year resident of Unalakleet, informed Hokkanen that local residents traveled to Tenmile Creek to hunt and pick berries. Peterson said that a sixteen-foot skiff with a twenty-five- to fifty-horsepower motor could reach this tributary at high water.

Hokkanen recommended that BLM determined the river navigable from the upper limit of the village selection, for which a determination had already been made, to Tenmile Creek. At the same time Hokkanen recommended the lowest portions of Old Woman and Chirokey rivers and the North Fork navigable. She recommended all other tributaries above the Unalakleet selection to be nonnavigable. The agency adopted these recommendations on February 7, 1983. 733/

#### Old Woman River

In the summer of 1975 Kenneth Krieger and James Humphreys examined the lowest portion of this river as a part of a BLM study of the proposed Unalakleet Wild River system. They traveled five-sixths of the way up to an unnamed tributary which entered the river in Sec. 27, T. 17 S., R. 6 W., Kateel River Meridian. They used a twenty-foot Mon-Ark riverboat powered by either a thirty-three-horsepower outboard or a forty-horsepower jet unit. The pair described the entire stretch as "generally a wide, shallow river." For the lowest third of this stretch the pool to riffle ratio was 50:50 and in the middle third it was 20:80; they gave no figure for the uppermost part. Krieger and Humphreys also stated that at "moderate to low water levels a jet unit would be inadequate" to ascend the river. They observed no landing sites for float or wheeled planes. 734/

The BLM addressed the navigability of Old Woman River when making its determination for the Unalakleet Wild River Corridor management plan. Virginia Hokkanen of the Anchorage District Office drafted a report after interviewing federal and State officials familiar with the river. David Dapkus of the ADO had floated on the Unalakleet and on the lowest ten miles of Old Woman River in 1973. Nine years later Ron Huntsinger, also



of ADO, took a sixteen-foot boat with a forty-horsepower motor up Unalakleet River and about ten miles of Old Woman River. David Mindell, a BLM biologist, took an eighteen-foot skiff with a thirty-five-horsepower motor up the river "as far as possible" (10 km) in 1982. Two biologists with the ADF&G estimated how far up Old Woman they could boat. Charles Lean told Hokkanen that a jet boat could power a boat to Sec. 33, T. 20 S., R. 6 W., Kateel River Meridian. Don Peterson stated that a sixteen-foot skiff with a twenty-five- to fifty-horsepower motor could ascend to the southern boundary of T. 18 S., R. 6 W., in spring and to Sec. 27, T. 17 S., R. 6 W., in summer. Hokkanen's report does not make it clear what basis Lean had for his opinion. Peterson had been on the river. Nevertheless, based upon this information, Hokkanen recommended that BLM consider the river navigable within the river corridor, that is up a very short distance to the southern boundary of Sec. 10, T. 17 S., R. 6 W., Kateel River Meridian. The agency adopted this recommendation on February 7, 1983. 735/

#### North Fork Unalakleet River

Kenneth Krieger and James Humphreys examined this river near its mouth in the summer of 1975 as part of a BLM study of the proposed Unalakleet Wild River system. They went about a mile up the river in a twenty-foot Mon-Ark riverboat using either a thirty-three-horsepower outboard or, more likely, a forty-horsepower jet unit. They did not calculate the width or depth "because of the continuous splitting and coming together of several branches of the stream." Krieger and Humphreys wrote that the pool to riffle ratio up to an unnamed tributary entering the North Fork in Sec. 2, T. 17 S., R. 7 W., Kateel River Meridian was 30:70. The fork in this stretch "was not navigable with a jet unit during low water. The main channels at the lower end of the river did not allow for sufficient flow in any one of the channels for a jet unit." They added that aircraft landing sites did not exist. 736/

The BLM determined the lowest portion of the North Fork or that part in the Unalakleet Wild River Corridor, to be navigable. Virginia Hokkanen, a realty specialist at the Anchorage District Office, conducted a literature search, which produced nothing not already noted above, and a series of interviews. Ron Huntsinger, also of the ADO, told Hokkanen that in 1982 he had ascended the Unalakleet and some of its tributaries. He had not gone up the North Fork, however, because of its severe braiding at its mouth. Two ADF&G biologists estimated how far certain craft could ascend the fork, though it is uncertain upon what they based their estimates, as Hokkanen did not record that either had traveled on the fork. Charles Lean estimated that a jet boat could proceed up to Sec. 3, T. 14 S., R. 5 W., Kateel River Meridian; Don Peterson believed that a sixteen-foot boat with a twenty-five- to fifty-horsepower motor could reach Sec. 17, T. 16 S., R. 6 W., in spring and Sec. 1, T. 17 S., R. 7 W., in summer. (Note: The North Fork does not flow through the last section.) Based upon this information, Hokkanen recommended that the fork be considered navigable through the Wild River Corridor, that is up the short distance to the north boundary of Sec. 26, T. 17 S., R. 7 W., Kateel River Meridian. On February 7, 1983, the BLM adopted this recommendation. 737/

#### Chiroskey River

Sara Machetanz's 1961 publication, *Howl of the Malemute*, recounted her and her husband Fred's activities at Unalakleet in the 1950s. Early one October they and some friends took a riverboat up the Unalakleet and then an unstated distance up the Chiroskey to harvest firewood. She described the Chiroskey as "perhaps the width of four skiffs and swift running." They spent at least one night at their campsite. They cut logs and fashioned them into a raft. When completed, they lined the raft to the Unalakleet River within two or three hours, and floated it down to their home. 738/

As part of their study of the proposed Unalakleet Wild River system, Kenneth Krieger and James Humphreys examined the Chiroskey River to or nearly to the unnamed right-bank tributary with its mouth in Sec. 8, T. 19 S., R. 8 W., Kateel River Meridian in the summer of 1975. They went five-sixth of the way up to this tributary in a twenty-foot Mon-Ark riverboat, probably using a forty-horsepower jet unit, though they also had a thirty-three-horsepower outboard. The two described the river as between 30 and 100 feet wide (average 60 feet) and 4 inches to 6 feet deep (2.5 feet average). The pool to riffle ratios for the lower, middle, and upper thirds of this stretch of the river were 90:10, 70:30, and 50:50, respectively. Krieger and Humphreys stated that snags were the primary impediment to travel, that there were no aircraft landing sites, and that up to the unnamed tributary the river "was accessible [sic] with a jet unit." 739/

Virginia Hokkanen, a BLM realty specialist at the Anchorage District Office, drafted a report dated January 3, 1983, addressing the navigability of Chiroskey River and other water bodies within the Unalakleet Wild River Corridor. Her report noted the experience and impressions of several government employees on the river. In 1979 David Mindell of ADO had found the Chiroskey too shallow for his eighteen-foot skiff. Ron Huntsinger also of ADO in 1981 took a sixteen-foot boat with a forty-horsepower motor five to ten miles up the river. Hokkanen did not state that Charles Lean of the ADF&G had ever been on the river, but Lean estimated that a jet unit could power a boat up to the southern boundary of T. 20 S., R. 9 W., Kateel River Meridian. Don Peterson, an ADF&G employee who resided at Unalakleet for seven years, had been on the Chiroskey and told Hokkanen that a sixteen-foot skiff with a twenty-five- to fifty-horsepower motor could reach the southern boundary of T. 19 S., R. 8 W., Kateel River Meridian in the spring; the upper limit in summer would be Sec. 9 of the same township. Hokkanen recommended, and on February 7, 1983 the Assistant State Director for Conveyance Management determined, that the Chiroskey be considered navigable up through the river corridor which did not extend above Sec. 19, T. 18 S., R. 8 W., Kateel River Meridian. 740/

#### North River

William Sheppard, who conducted an ethnographic study, including oral interviews, for a 1983 publication on the Norton Sound area, uncovered evidence of kayak travel on the North River. He wrote that Qayivik was a site at which Natives stored their kayaks "when the hunters reached the upper limits of water travel." Sheppard did not know the location of Qayivik, but marked it approximately in either T. 15 or 16 S., R. 8 W., Kateel River Meridian. 741/

The BLM considered the North River's navigability in the process of conveying lands encompassing much of its lower half to Unalakleet Natives. In August 1975 Rhett Wise and other BLM representatives attended a Unalakleet village meeting at which Wise learned that under ideal conditions, sixteen-foot boats could travel an unstated distance up North River. The agency's easement staff convened on February 17, 1978. It recommended that the North River be determined navigable to the eastern boundary of Sec. 28, T. 18 S., R. 10 W., Kateel River Meridian. Apparently this upper limit was based on the limit of tidal effect because the staff also recommended a streamside easement "from tidal influence" from this section to a site easement in Sec. 2, T. 18 S., R. 10 W., Kateel River Meridian. The site easement was to include a twenty-five-foot-wide easement along the bed of the river. Both easements were to assist recreationists use the river. 742/

The Notice of Proposed Easement Recommendations for the village issued on August 2, 1979 reflected the recommendations of the easement staff except to drop the streamside easement. Unalakleet promptly protested the navigable finding for North River stating that even for small boats it was "very difficult to travel . . . due to shallow depth, many rapids and submerged logs, snags and objects making it very hazardous." Villagers reiterated this sentiment in a meeting attended by two BLM employees on May 7, 1980. One of the employees, Bob Baker, later wrote a memo to the files noting that the Natives objected to the North River's designation as a major waterway above "Harold's Slough" in Sec. 15, T. 18 S., R. 9 W., Kateel River Meridian. (This location is incorrect as the river runs through Sec. 15, T. 18 S., R. 10 W., but not through T. 18 S., R. 9 W. However, it is not certain that Harold's Slough is in the former location since the USGS inch-to-mile maps do not indicate any slough in it.) They stated that the river was "shallow and rocky" above the slough. Baker wrote that, "They have difficulty running their jet boats beyond that point. They feel that use above Harold's Slough would jeopardize subsistence [sic] and fish spawning." Similarly they objected to the site easement because "it is impossible to navigate the North River" to it and that to try to go above Harold's Slough "with a jet boat would destroy salmon spawning areas and jeopardize their subsistence." This testimony had an impact on the BLM's final easement statement. It maintained that the North River was navigable to the east boundary of Sec. 28, T. 18 S., R. 10 W., Kateel River Meridian because of "travel in trade and commerce," but dropped the site easement noting that the Natives claimed it was impossible to get jet boats much above Harold's Slough. On March 29, 1982 the BLM issued an Interim Conveyance to the village following the navigability and easement findings of the final easement statement. 743/

The agency also gathered information about the river's use in the course of making a navigability determination for the management plan of the Unalakleet Wild River Corridor. Don Peterson, an Alaska Department of Fish and Game employee and seven-year resident of Unalakleet, told the BLM's report writer that a sixteen-foot skiff with a twenty-five- to fifty-horsepower motor could ascend to the northern boundary of T. 15 S., R. 8 W., Kateel River Meridian in spring high water, but only through T. 18 S., R. 10 W., Kateel River Meridian in summer. Peterson had been on the river; Charles Lean, another ADF&G employee who gave the BLM report writer information, may not have visited the North River. Lean estimated that a jet boat could ascend to Sec. 14, T. 13 S., R. 7 W., Kateel River Meridian. However, because the North River was not within the Wild and Scenic Corridor, no navigability decision followed from this investigation. 744/

#### KLIKITARIK RIVER, QUEKILOK CREEK

The St. Michael ANCSA selection included the lower portions of these two water bodies. The BLM's village file does not indicate that the agency ever gave serious consideration to determining either to be navigable and on December 12, 1980 the State Director decided they were nonnavigable. 745/

#### NUNAVULNUK RIVER, KUIAK RIVER, KOGOK RIVER

These three water bodies flow through the Stebbins ANCSA selection. When three BLM employees attended a village meeting on August 5, 1975, the Natives told them that they boated on each of the rivers. The villagers stated that they traveled in all the area marked by the Alaska Division of Lands as navigable. The ADL map currently in the BLM's Navigability Section does not show any indication of navigability for the Kogok River. The State's map claimed the Nunavulnuk was navigable to and including an unnamed lake in Secs. 10, 14-15, T. 25 S., R. 19 W., Kateel River Meridian. The State's map showed the Kuiak navigable to and including two unnamed lakes near where it

branches. These lakes were in Secs. 28-29 and Secs. 29 and 32, T. 25 S., R. 19 W., Kateel River Meridian. On February 17, 1978 the BLM's easement staff met. The staff stated that the Nunavulnuk and Kuiak were navigable to the points indicated by the State and that the Kogok was navigable throughout the selection. The staff added that all were tidally influenced throughout the selection. The selection area included the Nunavulnuk to the east boundary of T. 25 S., R. 19 W., Kateel River Meridian, the Kuiak to the east boundary of Sec. 11, T. 26 S., R. 19 W., Kateel River Meridian, and the Kogok to the east boundary of Sec. 34 of the same township. On March 26, 1981 the State Director determined the Nunavulnuk navigable through Sec. 33, T. 25 S., R. 20 W., Kateel River Meridian, the Kuiak through Secs. 28 and 32 of the same township, and the Kogok through Sec. 33, T. 25 S., R. 20 W., Kateel River Meridian. 746/

#### PIKMIKTALIK RIVER

In 1926 the U.S. Coast and Geodetic Survey gave the following description of the Pikmiktalik River: "In the mouth of the right-hand stream there is an anchorage for medium-sized steamers. The bar to this stream has only about 2 1/2 feet (0.8 m.) on it at mean low tide." A small Eskimo village existed in Sec. 13, T. 26 S., R. 21 W., Kateel River Meridian near the river's mouth for much of the nineteenth and early twentieth centuries. 747/

## NOTES

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5. Ibid., 381-82; Arthur J. Collier, Frank L. Hess, Philip S. Smith, and Alfred H. Brooks, The Gold Placers of Parts of Seward Peninsula, Alaska, U.S. Geological Survey Bulletin 328 (Washington, D.C.: Government Printing Office, 1908), 282-83; Philip S. Smith, Geology and Mineral Resources of the Solomon and Casadepaga Quadrangles, Seward Peninsula, Alaska, U.S. Geological Survey Bulletin 433 (Washington, D.C.: Government Printing Office), 13; Arthur J. Collier, A Reconnaissance of the Northwestern Portion of the Seward Peninsula, Alaska, U.S. Geological Survey Professional Paper 2 (Washington, D.C.: Government Printing Office, 1902), 54; Edward Steidtmann and S. H. Cathcart, Geology of the York Tin Deposits Alaska, U.S. Geological Survey Bulletin 733 (Washington, D.C.: Government Printing Office, 1922), 10.
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9. Burch, "Inter-Regional Transportation", 4-6.

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11. William L. Sheppard, Continuity and Change in Norton Sound: Historic Sites and Their Contexts, Occasional Paper No. 37 (Fairbanks: Cooperative Parks Study Unit, 1983), 36-37, 49.
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37. Howard L. Smith, Report, May 27, 1977, File F-14876, ANCSA files.
38. Sherman Berg to files, April 11, 1980, File F-14876, ANCSA files.
39. Dennis P. Daigger to Gary Seitz, March 22, 1983, File F-14876, ANCSA files.

40. Assistant to the State Director for Conveyance Management to Chief, Division of ANCSA and State Conveyances, June 24, 1983, File F-14876, ANCSA files.
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47. Howard Lot Smith, Report on Kivalina Village Selection F-14876, [January 18, 1978], File F-14876, ANCSA files.
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53. Ibid., 974, 982-83, 1005.
54. Ed Swanson to Dick Thompson, September 18, 1975, File F-14876, ANCSA files.
55. Phil Driver to BLM-F, May 27, 1976, File F-14876, ANCSA files.
56. Phil Bailey to files, n.d., File F-14876, ANCSA files.
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738. Machetanz, The Howl of the Malemute, 24, 31.
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740. See note 733 above.
741. Sheppard, Continuity and Change, 49.
742. Rhett S. Wise to files, n. d. and DM-A to files, September 19, 1978, File F-14952, ANCSA files.

743. Notice of Proposed Easement Recommendations, August 2, 1979, Paul Ivanoff to State Director, August 24, 1979, Bob Baker to files, May 16, 1980, SD to Chief, Division of ANCSA Operations, December 18, 1980, Interim Conveyances, March 29, 1982, File F-14952, ANCSA files.
744. Virginia L. Hokkanen, Report, January 3, 1983, Unalakleet Quadrangle File.
745. SD to Chief, Division of ANCSA Operations, December 12, 1980, File F-14938, ANCSA files.
746. [Rhett Wise] to files, n.d., DM-A to files, November 20, 1978, Chief, Branch of Lands and Minerals Operations to DM-A, February 16, 1978, SD to Chief, Division of ANCSA Operations, March 26, 1981, File F-14939, ANCSA files; Alaska Division of Lands, Water Delineation Map K-16-6, copy in Navigability Section.
747. U.S. Coast and Geodetic Survey, United States Coast Pilot, Alaska, pt. 2, 2d ed., p. 310; Orth, Dictionary of Alaska Place Names, 754.

## APPENDIX

This table contains information extracted from Native allotment, Homesite, Headquarter Site, and Trade & Manufacturing site records. Water bodies are ordered as in previous chapters, beginning in the north and with tributaries following the main stream. The table lists parcels on a given stream beginning with the parcel farthest upstream. The table gives the means of access by both the applicant (A) and the field examiner (F); the date on which the applicant first came to the land and the use he or she made of it as indicated in the application (A) and field examination (F); and the applicant's name, home town, file number, date(s) of exam, improvements on the land, and miscellaneous information relevant to access and use.

Common abbreviations are:

bp - berry picking  
dog - dogsled; dogteam  
fish - fishing  
flopl - floatplane  
heli - helicopter  
hunt - hunting  
rndr - reindeer herding  
skipl - skiplane  
snmb - snowmobile  
trap - trapping  
vegs - grow or pick vegetables  
wg - wood gathering, wood cutting



Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Qcc</u>	<u>Use</u>	<u>Remarks</u>
<u>Akalalik Creek</u> 19, 11S61WU	boat, snmb (A)	50 (F)	hunt, fish (F)	Titus Nashookpuk, Pt. Hope, F16931B, 8/82. Examiner stated "Boats to the area in the summer." Comes 1-2 times per year. Photo shows broad but shallow stream.
<u>Kukpuk River</u> 29, 30, 34N30WK	boat, snmb, 3-whl (A)	64 (A)	hunt, fish, trap (A)	Sayers R. Tuzroyluk, Pt. Hope, F16713, 8/82. Photos show river very wide.
29, 34N30WK	boat, snmb (A)			Tutus Nashookpuk, Pt. Hope, F16931D, 8/82. Ancestors' sod house in ruins; (F) stated "People occasionally boat on this upper stretch of the river."
29, 30, 34N30WK	boat, snmb (A)	53 (A)	trap, hunt, fish (A), hunt, fish, trap, bp (F)	Raymond P. Stone, Pt. Hope, F18596, 8/82.
17, 18, 20, 34N30WK	heli (F)	19 (A)	hunt, fish, trap (A) (F)	Stanley K. Solomon, Fairbanks, F18816A, 7/74.
13, 34N31WK and 18, 34N30WK	boat, 3-whl, snmb (A)	50s (F)	hunt, fish, trap, bp (F)	John N. Long, Sr., Pt. Hope, F16928B, 8/82.
11, 34N31WK	heli (F)	60 (A)	hunt, bp, trap (A) hunt, fish, trap (F)	James Omnik, Pt. Hope, F16702, 7/73, 7/74. 7/73 examiner stated best access was by boat or floatplane in summer, skiplane or snowmobile in winter.
11, 34N31WK and 30, 12S59WU	boat, snmb (A)	40s (F)	fish, hunt, trap, rndr (F)	Margaret K. Killigvuk, Pt. Hope, F16738B, 8/82. Sod house depression, stove, fish nets.
30, 12S59WU	heli (F)	50 (A)	fish, hunt (F)	Nick A. Hank, Pt. Hope, F13444A, 7/73. Examiner stated best access by boat or floatplane in summer and skiplane in winter.
19, 30, 12S59WU	heli (F)		subsistence (F)	Seymour Tuzroyluke, Point Hope, F17196B, 7/73. Old cabin. Best access to Parcel is by boat or floatplane. Lands are traditionally used for fishing, hunting, trapping and berry picking along this river.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
19, 30, 12S59WU	boat, snmb, dog (A); heli (F 8/82)	56 (F)	fish, hunt (F)	Doris Attungana, Pt. Hope, F16727B, 7/73, 8/82. Sod house ruins.
19, 12S59WU	boat, flpl, skipl, snmb	16 (A)	fish, hunt (F)	Solomon Killigvuk, Pt. Hope, F13557C, 7/73.
18-19, 12S59WU and 24, 12S609WU	boat, snmb, 3-whl (A)	51 (A)		Edward Killigvuk, Pt. Hope, F16736A, 8/82. Appl. deceased.
15, 12S60WU	boat, flop1, skip1, snmb	16 (A)	fish, hunt (F)	Solomon Killigvuk, Pt. Hope, F13557B, 7/73.
15, 16, 12S60WU	boat, dog (A); heli (F)		hunt, fish (F)	Jimmy Killigvuk, Pt. Hope, F16737A, 8/82. Deceased. Old sod hut and plywood on parcel. People boat on the Kukpuk River, according to examiner.
9-10, 15-16, 12S60WU	boat, snmb, 3-whl (A)	51 (A)		Edward Killigvuk, Pt. Hope, F16736B, 8/82. Appl. deceased.
16, 12S60WU	boat, flop1, skip1, snmb (F)	16 (A)	fish, hunt, trap, bp (F)	Solomon Killigvuk, Pt. Hope, F13557A, 7/73.
<u>Oqsachak Creek</u> (trib. of Kukpuk River)				
19, 12S59WU	heli (F)		hunt, trap (F 7/73) hunt, rndr (F 8/83)	Jimmy Killigvuk, Pt. Hope, F16737B, 7/73, 8/83. Appl. deceased. Best access to Parcel is by boat, ski-plane or snmb. Supp. report 8/83, hunt and reindeer herding.
<u>Ipewik River</u> (trib. of Kukpuk River)				
10, 11, 11S57WU	boat, dog, snmb (A); heli (F)	60 (A) 60 (F)	hunt, fish, bp (A) trap (F)	Harry Hank, Pt. Hope, F17007, 7/74. Appl. deceased.
2, 3, 11S56WU	heli (F)		hunt (F)	Nicholas Hank Sr., Pt. Hope, F13444D, 2/74, 8/82. 2/74 best access by boat or flop1 in summer or skip1. 8/82 photos show river about 2 chains wide.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Nilik River</u> (trib. of Ipewik River) 1, 10S57WU; 36, 9S57WU	boat, snmb, dog (F)	44 (A) (F)	hunt, trap, fish (F)	Hubert S. Koonuk, Pt. Hope, F13975B, [74].
<u>Asikpak River</u> 10, 29N26WK	heli (F)	41 (F)	hunt, trap (F)	Oscar Swan, Kivalina, F13783-D, 8/75. Photo shows river, in places, 20' wide w/patches of exposed gravel and rock protruding nearly all the way across stream.
<u>Kivalina River</u> 17, 18, 30N24WK	plane (A); plane (F)	47 (A) 71 (F)	hunt, fish, camp (A) fish, hunt, guide (F)	Arthur R. Fields, Jr., Kotzebue, F17548, 6/79. Examiner stated appl accessed by plane. Snmb or very shallow-draft boat (poling or lining involved) were possible; tent frames, small storage bldg., mess area.
5, 29N24WK	boat, snmb (A); heli (F)	56 (A)	fish, trap, camp, bp (A) fish, trap, hunt, bp (F)	Joe E. Swan, Kivalina, F14202, 7/75.
17, 29N24WK	boat, dog, snmb (A); heli (F)	57 (F)	hunt, fish, trap (F)	David E. Swan, Kivalina, F14246B, 8/75. Trails on Parcel 1; trail is a trapline trail.
20, 29N24WK	dog, snmb (A); heli (F)	41 (A)	fish, trap, camp (F)	Patrick K. Sage, Kivalina, F13913B, 8/75. Trail and camp.
20, 29N24WK	heli (F)	59 (F)	fish, hunt, camp (F)	Lowell W. Sage, Sr., Kivalina, F13778B, 8/75. Several fishnets stored on Parcel.
<u>Mulik River</u> 10, 15, 30N21WK	plane (F)	49 (A)	campsite, hunt, fish (A)	Mae Sheldon, Kotzebue, F16417, 1/80, Appl's father said appl had not been on parcel. Examiner stated access to site possible by shallow-draft boat with some lining.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
15, 30N21WK	air (A); heli (F)	73 (A)	guide	John W. Elmore, Nome, F19703, 9/76. Gas cans found with Warren Thompson's name on them. Case closed.
22, 30N21WK	plane (A)	20 (A)	fish, hunt (A)	James Hawley, Sr., Kotzebue, F16460, 6/79. Additional access by shallow-draft boat or traditional winter means.
5, 8, 29N21WK	boat, dogteam, snmb (A); heli (F)	61 (A)	hunt, fish, trap (A) (F)	Chester Bundy, Kivalina, F14194, 7/75.
13, 29N22WK	boat, snmb (A); heli (F)	55 (A)	hunt, fish, trap, bp (A)(F)	Raymond M. Hawley, Kivalina, F18028, 7/75. Travels to parcel in late summer.
24, 29N22WK	boat, dog (A); heli (F)	40 (A)	fish (A)	Louise L. Hawley, Kivalina, F14206B, 8/75.
23, 26, 29N22WK	boat, dog, snmb (A); heli (F)	40 (F)	fish, camp, wg (F)	Louise L. Hawley, Kivalina, F14206A, 8/75.
26, 29N22WK	boat (A); heli (F)	63 (F)	fish, bp (F)	Emily Knox, Kivalina, F14207A, 7/75. Travels to parcel in late summer and stays 1-4 weeks.
27, 29N22WK	boat, snmb, dog (A); heli (F)	61 (A) 55 (F)	hunt, fish, trap (A)(F)	Fred Swan, Kivalina, F14201, 8/75. Travels in boat to parcel in late summer.
27, 29N22WK	boat, snmb, dog (A); heli (F)	41 (F)	hunt, fish, trap (F)	Oscar Swan, Kivalina, F13783B, 8/75.
27, 28, 34, 29N22WK	boat (A); heli (F)	57 (A)	fish, hunt, bp, trap (A)	Sherril I. Sage, Kivalina, F14166, 8/75. Applicant comes to parcel every fall to fish. It takes 3 days to get to Parcel by boat. Seven fish nests.
33, 29N22W	boat, snmb, dog (A); heli (F)	41 (F)	hunt, fish, trap (F)	Oscar Swan, Kivalina, F13783A, 8/75.
33, 29N22WK	plane (A)	73 (A)	guide, lodge (A)	Philip E. Driver, Anchorage, F19497, T&M, 8/76 (field report acceptance), 5 cabins, lodge building, screened meat house, outhouses, generator house, fuel storage, rubber raft, riverboat, trash pit, garden, gravel bar landing, dirt strip, winter strip, sewer tank, boat tie up, foot paths and guiding gear. Photo of riverboat and inflatable raft.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
32, 33, 29N22WK		64 (A)	hunt, fish, trap (F)	Lewis Wesley, Kivalina, F13438, 8/75. Appl. 30 years old in '75 and had used parcel since childhood.
26, 28N24WK	dog, snmb (A); heli (F)	41 (A)	hunt, fish, trap, camp (A) hunt, fish, trap (F)	Patrick K. Sage, Kivalina, F13913A, 8/75.
27, 28, 28N24WK	heli (F)	55 (F)	fish, hunt, trap (F)	Lowell W. Sage, Sr., Kivalina, F13778A, 8/75.
30, 28N24WK	heli (F)			Emily Knox, Kivalina, F14207B, 7/75. Appl. never on Parcel.
<u>Tutak Creek</u> (trib. of Wulik River) 22, 28N20WK	heli (F)	62 (A)	hunt, trap, fish (A)	Jimmy Arey, Noatak, F14000-B, 9/74. Creek shown on photo as about 6" deep, 3-4" wide, and heavily rocky.
<u>Ikalukrok Creek</u> (trib. of Wulik River) 24, 25, 29N22WK	boat, snmb, plane (A)	40s (F)	fish, bp (F)	Esther Sage, Kivalina, F14243A, 6/83. Examiner stated that Wulik was access route and that there were no trails. Photo shows Wulik is braided and probably contributes some water to the lowest portion of Ikalukrok Creek.
<u>New Heart Creek</u> 35, 26N24WK	dog, snmb, (A); heli (F)	36 (A) 54 (F)	hunt, trap (A) camp (F)	Russell Adams, Kotzebue, F18645, 7/75. Makes camp on top of snow. Usually returns to Kivalina at night.
<u>Otkurak Creek</u> (trib. of Noatak River) 17, 26N16EK	flop1 (F)	59 (A) (F)	hunt, fish, bp (A) (F)	Myra Walker, Kotzebue, F19203, 8/72. Cabin and fish drying rack.
<u>Feniak Lake</u> (Makpik Creek flows to Noatak River) 30, 31, 33N3EK	plane (F)	56 (F)	fish, bp, hunt (A)	Donald J. Ferguson, Kotzebue, F18033C, 7/75. Examiner stated that snowmachine access was possible in winter.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
30, 31, 33N3EK		57 (A) 65 (W)	camp, fish, hunt, bp (A)(F)	Sophie A. Ferguson, Kotzebue, F17837A, 7/75. Landing strip.
25, 33N2EK; 30 33N3EK	plane (F)			Hattie A. Gregory, Palmer, F18499A, 7/75. Six sod house pits, landing strip.
<u>Kelly River</u> 4, 29N16WK	riverboat (A) heli (F)	62 (A) 62 (F)	hunt, fish, trap, camp (A) (F)	Victor Onalik, Noatak, F13442, 9/74, Now USS 6704.
9, 29N16WK		51 (F)	hunt, fish, trap (A) (F)	Enoch Sherman, Fairbanks, F476B, 9/74. Sod and wood house, tent, cache, cut cabin, firewood logs.
<u>Unnamed Slough</u> (north bank of Noatak River) 20, 21, 28, 29, 29N17WK	dog, snmb (A)	63 (A)	fish, hunt, bp (A) hunt, trap, wg (F)	Rodney Howarth, Noatak, F13441, 6/75.
<u>Pingaluruk Creek</u> 12, 13, 28N18WK; 18, 28N19WK	heli (F)	55 (A)	hunt, bp, trap (A)	Murphy K. Downey, Noatak, F13440, 9/74. Appl. deceased; campsite, cut trees, old tent frame. Now USS 6730 Patented.
<u>Eli River</u> (trib. of Noatak River) 21, 28, 27N14WK	plane (A) heli (F)	50 (A) 50s (F)		Arlene F. Stivens, Kotzebue, F17627, 6/80. Appl. told Robert L. Wilkinson that she flew there with father in 1950s and with her ex-husband in the 1960s. She was born in 1951.
<u>Aliktongnak Lake</u> (outlet flows to Sevisok Slough of Noatak River) 10, 23N18WK	boat, dog, snmb (A) heli (F)	52 (A) 40s (F)	hunt, fish (A) hunt (F)	James P. Hensley, Kotzebue, F17587, 7/80. Appl. deceased.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
9, 23N18WK	boat, snmb (A) heli (F)	50(A)	fish, bp, trap (A) fish, pick roots, bp, hunt trap, home (F)	Minnie Smith, Kotzebue, F17598, 6/80. Minnie lived on parcel until 1960. Remains of old cabin on parcel.
<u>Unnamed Stream</u> (trib. of Noatak River) 32, 33, 26N19WK	foot (A) heli (F)		vegs (F)	Lona Penn, Noatak, F13618B, 9/74. Appl. deceased.
<u>Unnamed Stream</u> (trib. of Noatak River) 26, 23N18WK	heli (F)	51 (A)	fish, bp, hunt (A)	Daisy Schaffer, Kotzebue, F16468, 6/80. Appl. deceased. Nina Dahl (older sister) accompanied (F) to tract.
<u>Unnamed Stream</u> (trib. of Agashashok River) 22, 24N15WK	snmb, dog (A) heli (F)	50s (F)	hunt (F)	Bert Beltz, Jr., Kotzebue, F16893D, 6/80.
<u>Unnamed Stream</u> (trib. of Agashashok River) 19, 22N17WK	heli (F)		hunt, fish, camp (A)	Ester Jessup, Kotzebue, F17301B, 7/74. Examiner stated applicant never on tract. In 1/83 appl. wrote that she began using parcel in 1925 traveling up by boat for hunting and fishing. Went up in boat again in 1980.
<u>Unnamed Stream</u> (trib. of Noatak River; local name is Pike's Slough) 12, 20N18WK	boat snmb (A) boat (F)	45 (A) 30s (F)	hunt, fish, bp (A)	Walter Reich, Kotzebue, F13881, 9/78.
28, 20N17WK	boat, snmb (A) boat (F)	65 (A) 65 (F)	hunt, fish, bp (A) (F)	Herman Reich, Kotzebue, F13829, 6/78.
<u>Hugo Creek</u> 14, 20N17WK	boat, snmb (A) boat (F)	47 (A) (F)	hunt, fish, trap, (A) fish, hunt, bp (F)	Charlie E. Henry, Kotzebue, F26395, 7/78. Cabin; creek appears to be approx. 20' wide and fairly deep in photo.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Little Noatak Slough</u> 27, 34, 20N17WK	boat, snmb (A) boat (F)	17 (A) 50 (F)	hunt, fish, bp (A) (F)	William Mendenhall, Kotzebue, F16343A, 3/73. Cabin built in 1950, meat drying rack.
34, 35, 20N17WK; 2, 3, 19N17WK	boat (A) (F)	40 (A) 55 (F)	camp, hunt, bp (A) bp, hunt, fish (F)	Ida Richards, Kotzebue, F15985, 6/78. Cabin built about 1972, fish racks, outhouse, tent pegs, fire pits.
1, 2, 19N17WK	boat (A) (F)	38 (A)		Dolly Sours, Kotzebue, F15998, 7/79. (F) says appl. has only been on tract once. She came by boat. Says originally was husband's site. They went over it once together.
7, 19N16WK	boat, snmb, dog (A) boat (F)	64 (A)	hunt, fish, camp, trap (F)	Carl Nelson, Kotzebue, F13908B, 6/78. Appl. deceased. Cabin site, trails, stove, pits.
29, 30, 19N16WK	boat, snmb (A)	49 (A)	hunt, fish, camp (A) (F)	Nancy Taylor Trusty, Kotzebue, F16003, 7/83.
32, 19N16WK	boat, dog (A) boat (F)	36 (A)	home, fish, hunt, trap (A) fish, hunt, bp (F)	Peter Nelson, Kotzebue, F12121A, 6/78. Photo in field report shows boat and motor, 25 hp; house, shed and fish racks were on parcel.
<u>Unnamed Lake</u> (outlet flows to Little Noatak Slough) 26, 20N17WK	boat, snmb (A)	62 (A) (F 3/73) 56 (F 7/79)	bp, hunt (A)(F)	Rachel Adams, Kotzebue, F15951, 3/73, 7/79.
22, 23, 26, 27, 20N17WK	boat, snmb (A) boat (F)	60 (F)	hunt, bp (A) (F)	Margaret B. Russell, Kotzebue, F15986A, 7/78.
15, 21, 20N17WK		31 (A)	hunt, bp (A)	Easter Henry, Kotzebue, F16977, 3/73. Examiner stated best access to tract is by boat or plane in summer, snmb or skiplane in winter.



Native Allotments of Northwest Alaska

Location	Access	Occ	Use	Remarks
15, 20N17WK	boat, snmb (A) boat (F)	54 (A)	hunt, fish, trap (A) hunt, fish, bp (F)	Oliver Henry, Kotzebue, F13604, 7/78. Old cabin site.
<u>Shiliak Creek</u> (trib. of Little Noatak Slough)				
23, 24, 25, 26, 20N16WK	snmb, dog (A) heli (F)	19 (A) 61 (F)	hunt, trap, fish, bp (A) hunt, wg (F)	Elsie Adams, Kotzebue, F18032A, 7/79. Cabin, trail; creek appears 15' wide in photo.
25, 26, 20N16WK	snmb (A) heli (F)	46 (A) 60s (F)	fish, hunt (A) hunt, camp (F)	Leo. P Ferreira, Kotzebue, F15960, 7/79. Cabin.
25, 26, 20N16WK	heli (F)	50 (A)	bp, hunt (A)	Bonnie Ferreira, Kotzebue, F17579, 7/79. Examiner stated applicant said she had never been to tract.
5, 8, 19N16WK	boat, snmb (A)	65 (A)(F)	hunt, fish, trap, bp (A)(F)	Karl V. Geffe, Sr., Kotzebue, F15963, 6/79. Tent poles.
8, 17, 19N16WK	boat, snmb (A) outboard motor craft (F)	58 (A)	hunt, fish, camp (A) hunt, fish, bp (F)	Daniel Thomas, Sr., Kotzebue, F17600A, 6/78. Appl. deceased. Old tent and boat launching area.
17, 18, 19N16WK	boat, snmb (A) boat (F)	52 (A)	hunt, fish (A) hunt, fish, bp (F)	Frank Davidovics, Jr., Kotzebue, F16976A, 6/79. Fire pits, snmb, tent poles, traps.
<u>Unnamed Slough</u> (leaves Noatak River Sec. 18, T. 19 N., R. 17 W., KRM; local name is Paul's Slough)				
7, 19N17WK; 12, 19N18WK	boat (A); heli (F)	60 (A)	camp (A) hunt, bp (F)	Lewis J. Norton, Kotzebue, F17593, 6/80. Cleared camp.
11, 19N18WK	boat (A) (F)	65 (A) 50 (F)	hunt, fish, camp, bp (A) hunt, fish, bp (F)	Sophie R. Evans, Kotzebue, F15010, 6/78.
10, 11, 19N18WK	boat (A) (F)	55 (A) 30 (F)	bp, fish (A) fish, hunt, bp (F)	Minnie Norton, Kotzebue, F13231, 6/78. Fire pit, storage pit, cabin, fish racks, metal cans, cache.
10, 19N18WK	boat, snmb, dog (A) boat (F)	50 (A)	hunt, fish bp (F)	Ester Norton, Kotzebue, F13805, 6/78. Examiner saw two boats on Paul's Slough, 14' (approx.) and 18' (approx.).

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
3, 10, 19N18WK	boat, dog (A) boat (F)	13 (A) 20 (F)	bp, fish, hunt (A) (F)	James Norton, Kotzebue, F17562, 6/78. Campsite.
3, 19N18WK	outboard motor boat (F)	50 (A)	bp, fish (A) bp, hunt, fish (F)	Pauline Henry, Kotzebue, F17586, 8/78. Tent stakes. Appl. father on exam. Access at other times of year could be snmb, plane and dog team.
3, 9, 10, 19N18WK	boat, snmb (A) boat (F)	64 (A) 39 (F)	bp, fish (A) camp, bp, fish (F)	Juanita Norton, Kotzebue, F13880, 6/78. Appl. on exam. Parcel used as a home port for hunters.
4, 9, 19N18WK	boat w/outboard, rowboat (A) boat w/outboard (F)	29 (A) 47 (F)	bp, fish (A) (F)	Hannah Gallahorn, Kotzebue, F14656B, 7/78. Tent pegs.
7, 19N18WK	boat w/motor (F)	46 (A) 56 (F)	fish, bp, hunt (A) vegs, hunt, fish (F)	Magdelane Tikik, Kotzebue, F17601, 1/78. Campsite. Appl. on exam. Other access could be snmb, plane, dogsled.
7, 19N18WK	boat (A) (F)	48 (A)	hunt, fish, bp (A) hunt, fish, bp, home (F) bp (W)	Mabel A. Henry, Kotzebue, F13236, 7/78. Appl., nephew, and another party have cabins on tract. Examiner found berries, cabins, cache, and fish racks on tract.
<u>Unnamed Stream</u> (trib. of unnamed slough of Noatak River) 33, 20N19WK	dog, snmb (A); skip1 (F)	60 (F)	hunt, trap (F)	Carrie K. Uhl, Kotzebue, F13101B, 4/71. Cabin. Winter trail from parcel to Sheshalik and Kotzebue. Uhl's moved to Parcel B from summer home at Sheshalik Spit, during Oct. or Nov. depending on snow. In May applicant moved back to Sheshalik. Examiner stated also accessible by foot.
3, 19N19WK	dog, snmb (A) heli (F)	55 (A) 56 (F)	trap, hunt, fish, bp (A) wg, trap, hunt, camp (F)	Charles Green, Kotzebue, F17583, 7/79. Cabin built by appl. and brother, remains of appl. grandparents cabin. Fire pit, caribou skins, antlers, plastic sheet and trail.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
1, 2, 19N19WK	dog (A) heli (F)	60 (F)	hunt, camp (F)	James L. Jones, Kotzebue, F17556B, 7/79 Appl. deceased, only winter use due to lack of summer access. Camp site, cut trees, tent space, trails, and stove.
1, 19N19WK	boat, snmb, dog (A) boat (F)	50s (A) (F)	hunt, trap (A) hunt, fish, trap, bp, wg (F)	Roswell L. Schaeffer, Sr., Kotzebue, F17596, 7/79. First used as small child with father. Cabin built 1972, with wood stove, gas stove, bed, wood pile, practice range, caribou skins, trails from boat landing. Exam photo shows Ross fishing in stream in aluminum boat with inboard motor.
6, 19N18WK		63 (A)	hunt, bp (A)	Lydia Harris, Kotzebue, F17677, 4/73. Cabin. Examiner stated tract can be reached by boat, plane or snmb.
5, 6, 19N18WK	boat, snmb (A)	49 (A)	fish, bp, hunt (A)	Fanny Viglione, New York prior to Kotzebue, F17602, 6/83. Applicants personal knowledge not verifiable on exam.
5,8, 19N18WK	boat (F)	67 (F)		Mabel Schaeffer, Kotzebue, F16469B, 7/78. Examiner said access also possible by dogsled, snmb and plane.
5, 19N18WK	boat, snmb, sled (A) boat (F)	57 (F)	hunt, fish, wg (F)	James Coppock, Kotzebue, F16341B, 9/78. Cabin, cut trees, cache, tent frame, fish wheel, boat dock, fish racks.
5, 19N18WK		12 (A)	fish, hunt, bp (F)	Florence N. Harris, Kotzebue, F17676, 4/73. Best access to parcel is by boat of floatplane in summer. Also by skiplane and snmb in winter.
<u>Unnamed Slough</u> (leaves Noatak River Sec. 24, T. 19 N., R. 18 W., KRM)				
22, 19N18WK	boat, dog (A) heli (F)	06 (A) (F)	bp, hunt, fish (A) (F)	Esther Jessup, Kotzebue, F17301A, 7/79. Appl. born 10/7/06.
36, 19N17WK	boat (A) (F)		fish, bp (A) (F)	Jennie Sours, Kotzebue, F13317A, 7/79.

Native Allotments of Northwest Alaska

Location	Access	Occ	Use	Remarks
36, 19N17WK; 1, 18N17WK; 31, 19N16WK 6, 18N16WK	boat, snmb (A) boat (F)	46 (A) 65 (F)	hunt, fish (A) camp, hunt, fish (F)	Roy D. Hunnicutt, Kotzebue, F15971, [78]. Racks, bridge, tent frame; photo shows boat (approx. 15') above bridge.
<u>Walker Lake</u> 19, 20N21EK; 24, 20N20EK	plane (A) (F)	54 (A)	tour and h&f lodge (A)	Harmon R. Helmericks, Hughes, F011622, 8/62. Log houses, warehouse, smokehouse, 5'x50' dock for boat and plane mooring, rifle and archery range, garden plot, sanitary facilities. Now USS 3715, Patented.
24, 20N20EK		54 (A)	home	Martha Helmericks, Hughes, F30911, 7/68. Homesite. 2-room log cabin, now lot 2, USS 3715. Patented. Son has rest of island and flew to it.
<u>Mauneluk River</u> (trib. of Kobuk River) 15, 19N14EK	plane (A) heli (F)	25 (A)	fish, bp (A) (F)	May Bernhardt, Kobuk, F18992D, 8/74.
1, 18N12EK		74 (A)	sport fishing (A)	Lyle Haugsuen, Kotzebue, F21036, No Field Exam. Closed because of prior State selection.
13, 18N12EK	flop1 (F 7/76)	73 (A) (F)	home	Marko Lewis, Kobuk, F19599, 4/76, 7/76, 2/78, Homesite. Log cabin and cache. Examiner stated residents in area had canoes w/lifts for use on Mauneluk and that light airplanes with floats or skis provided most dependable access. Now USS 6384.
35, 36, 18N12EK	"fo1" boat (F)	73 (A)	lodge, trap, photo (A)	Gordon Haber, McKinley Park, F19565, HQ 6/77. Campsite. Statutory life expired; examiner stated that it should be subject of government contest. ("fo1" boat is a cheap klepper-type boat.)

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
3, 17N12EK	"fo1" boat, f1op1 (F)	73 (A)	treks (A)	Gordon Haber, McKinley Park, F19564, HQ, 7/79. Cabin, cache, outhouse. Letters in case file indicate site can be accessed by canoe of unspecified size. Now USS 6789, Patented.
35, 17N12EK	plane, snmb (A) plane, "fo1" boat (F)	73 (A)	photo, cabin rental (A)	Gary N. Brown, McKinley Park, F19596, 9/78. HQ site. Log cabin, cache. Examiner stated access could be had by shallow-draft boats. Tract now USS 6790. Patented.
8, 17N12EK	plane (F)	73 (A) 75 (F)	treks (A)	Gordon Haber, McKinley Park, F19563, T&M site, 6/77. Log cabin, cache, pit toilet. Examiner stated access can be had by canoe. Doubtful business had been conducted at site. Now USS 7149; Patented.
<u>Kogoluktuk River</u> (trib. of Kobuk River) 6, 20N6EK	heli, foot, plane (F)	74 (A)	camp, trap (A)	David R. Schmitz, College, F21045, 7/76. T&M site. Examiner stated easiest access was by snmb and heli. No use or improvements on tract. Examiner recommended gov't contest.
19, 20, 18N10EK	snmb (A) heli (F)	49 (A)	hunt, camp (A) hunt (F)	Edward Lee, Shungnak, F16370C, 8/74. Examiner noted campsites in area.
17, 20, 18N10EK	boat (A)(F)(W)		hunt (F) hunt, fish, bp (W)	Glenn Douglas, Shungnak, F16218B, 8/74.
<u>Unnamed Stream</u> (trib. of Kogoluktuk River) 5, 20N12EK	heli, foot, plane (F)	74 (A)	home	David Schmitz, College, F21044 (report in case file F021045) 7/76. Homesite. Examiner found no improvements, recommended gov't contest.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Unnamed Stream and Lake</u> (trib. of Kobuk River) 29, 18N9EK	boat, walk (A) heli (F)	16 (A)	bp, hunt, fish (A) camp, baskets, bp (F)	Eva Horner, Kobuk, F15664A, 7/74. Appl. traveled by boat from village of Kobuk, downriver 2 miles to landing used by Bornite Co., and walked up road to parcel 3/4 mile from river.
34, 18N9EK	foot (A)		camp, wg, bp (A)	Eva Horner, Kobuk, F15664C, 7/74. Graves.
<u>Kuikcherk River</u> (trib. of Kobuk River) 29, 17N9EK	riverboat (A) heli (F)	46 (A)	hunt, fish (A) bp, fish (F)	Vera Douglas, Shungnak, F13801B, 6/74. Easy chair, propane stove, fire pit. Now USS 5487.
<u>Wesley Creek</u> (trib. to Shungnak River) 25, 26, 18N8EK	heli (F)	69 (A)		Lena Coffee, Shungnak, F15871C, 7/74. On exam applicant not familiar with tract.
26, 18N8EK	heli (F)	61 (A)	hunt, trap, bp, wg (A)(W)	Edward Commack, Shungnak, F15873, 7/74. Examiner stated applicant probably did not use land himself; on Shungnak-Kobuk trail.
34, 18N8EK	heli (F)	69 (A)		Lena Coffee, Shungnak, F15871B, 7/74. Examiner stated applicant unfamiliar with tract.
35, 18N8EK	heli (F)	69 (A)		Lena Coffee, Shungnak, F15871A, 7/74. Examiner stated applicant was not familiar with tract.
<u>Tekeaksakrak Lake</u> (outlet flows to Kobuk River) 1, 16N7EK	heli (F)	60 (A) 56 (F)	hunt (A) (F)	Ernest Berry, Shungnak, F15866B&C, 7/79. Camp site and blind. Examiner stated access can be had by snmb, foot or plane.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
1, 2, 16N7EK	dog (A) heli (F)	58 (A)		Hilda Woods, Shungnak, F15799A, 7/79. Appl's brother told examiner she may have used the site as a child for bp and gathering willow and pitch bark.
25, 26, 35, 36, 17N7EK	riverboat (A) heli (F)	64 (A) 61 (F)	fish, hunt, bp (A)(F)	Elizabeth Jackson, Shungnak, F15886B, 8/74. Net setting areas. Now USS 5758, lot 3. Patented.
25, 36, 17N7EK	riverboat, snmb (A) heli (F)	49 (A)	hunt, trap, fish (A) hunt (F)	Stanley Custer, Shungnak, F15881, 8/74. 2 campsites, 2 fire pits, tent pegs. Independent use began 1958. Now USS 5758, lot 2. Certificate issued.
36, 17N7EK	riverboat, foot (F)	53 (A) 74 (F)	bp, hunt, (A) bp, hunt, camp (F)	Billy Custer, Shungnak, F15878, 7/79. Camp site, blind. Last mile access to lake on exam was by foot.
<u>Unnamed Lakes</u> (outlet flows to Kobuk River)				
22, 27, 17N7EK	riverboat, canoe (A) heli (F)	68 (A)	fish, bp (A) hunt, bp (F)	Magdalene Lee, Shungnak, F18999, 7/74. Tent frame.
<u>Cosmos Creek</u> (trib. of Kobuk River)				
4, 18N8EK	snmb (A) heli (F)	52 (A) 62 (W)	bp (A) hunt, trap, bp, wg (W)	Esther Commack, Shungnak, F15874, 6/74. Appl. told examiner she may have been on the tract once or twice.
18, 19, 18N8EK	snmb (A) heli (F)	68 (A)	hunt (A)	Donald Sun, Shungnak, F15893, 8/74. Examiner stated this was a caribou hunting area, trapping camp, wood gathering site. Now USS 5766. Certificate issued.
<u>Shungnak River</u> (trib. of Kobuk River)				
12, 22N10EK	ski, plane (A) heli (F)	74 (A) 79 (F)	guiding, ski, river trips (A)	Robert Waldrop, Jr., College, F21153, HQ, 7/79. Cache, tent frame, cabin site, decked logs and poles. Now USS 7177.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
23, 22N10EK	ski, plane (A) heli (F)	74 (A) 77 (F)	guiding, hiking, ski, river trips (A)	Robert Waldrop, Jr., College, F21152, T&M site, 7/79. Cabin, cache, 3-tent frames, structures used in connection with applicant's business. Now USS 7178.
34, 22N10EK		73 (A)		Nancy Dawson, McKinley Park, F19588. Homesite. Relinquished 6/77.
1, 21N10EK	snmb, heli, foot (F)	73 (A)		Stephen Trussel, Fairbanks, F19589, 8/77. Homesite. Statutory life expired 9/10/78.
<u>Melinda Creek</u> (trib. of Shungnak River) 2, 21N10EK		73 (A)		Roy Corral, Fairbanks, F19591, Homesite. Updated interim field report says cabin and sheds on land. Statutory life expired 9/10/78. Case Closed.
<u>Black River</u> (trib. of Kobuk River) 24, 25, 17N6EK	riverboat, snmb (A) heli (F)	49 (A)	hunt (A) hunt, fish (F)	Beulah Commack, Shungnak, F15872, 8/74. Tent pegs, net setting site, ice cellar, trail.
<u>Kugachevik Creek</u> (adjoining lake and outlet) 22, 18N5EK	boat (A)	65 (A) 60 (F)	trap, hunt, bp (F)	Tony Foster, Ambler, F18002, 8/74. Camp site on NE corner of Lake.
<u>Ambler River</u> (trib. of Kobuk River) 4, 22N9EK	shallow-draft boat, plane, snmb (F)	73 (A)		Ageo Frizzera, College, F19691, homesite, 7/77. Gov't contest recommended.
4, 22N9EK	shallow-draft boat, plane, snmb (F)	73 (A)		Arturo Frizzera, College, F19692, homesite, 7/77. Gov't contest recommended.



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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
21, 22N9EK	plane (F)	73 (A) (F)	home (A)	Richard A. Moe, McKinley Park, F19585, Homesite, 7/77. Examiner stated access possible by shallow-draft watercraft, snmb, foot. Cabin, outhouse, cache, trail system. Now lot 3, USS 6420. Patented.
22, 22N9EK	plane, heli (A) plane (F 8/76)	73 (A) (F)	home (A)	Mary Hebert Robinson, McKinley Park, F19583, Homesite, 5/76, 8/76, 7/77. Cabin, cache. Can be accessed by shallow-draft boats or canoes. Now USS 6420, lot 1, Patented.
22, 27, 22N9EK	plane (F 8/76) plane, shallow-draft boat (F 7/77)	74 (A)		Ford Reeves, McKinley Park, F21110, Homesite, 8/76, 7/77. No improvements. Access also possible by skipl and snmb.
21, 22N9EK	plane (F)	73 (A) (F)	home	Richard A. Moe, McKinley park, F19585, Homesite, 7/77. Examiner states access possible by shallow-draft watercraft, snmb, foot. Cabin, outhouse, cache, trail system. Now lot 3, USS 6420. Patented.
22, 22N9EK	plane, heli (A) plane (F 8/76)	73 (A) (F)	home	Mary Hebert Robinson, McKinley Park, F19583, Homesite, 5/76, 8/76, 7/77. Cabin, cache. Can be accessed by shallow-draft boats or canoes. Now USS 6420, lot 1, Patented.
22, 27, 22N9EK	plane (F 8/76) plane, shallow-draft boat (F 7/77)	74 (A)		Ford Reeves, McKinley Park, F21110, Homesite 8/76, 7/77. No improvements. Access also possible by skipl and snmb.
33, 22N9EK	heli, plane, shallow-draft boat, snmb (A) plane (F 8/76, 8/78)	73 (A)	home	David Maranville, Scappose, Or., F19601 Homesite. Cabin, shed, cache, gravel bar airstrip. Now USS 6463, Patented.
29, 32, 21N8EK	heli (F)		fish, bp, hunt (F)	Edna Griest, Ambler, F18141B, 6/74.
5, 6, 20N7EK	heli (F)	62 (A) 62 (F)	hunt, trap (A)(F)	Robert Cleveland, Ambler, F18000, 7/74.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
4, 22N9EK	plane (A) (F)	73 (A) (F)	home	Wilbur Mills, Fairbanks, F19615, 8/78. Cache, cabin, cold storage pit, boat motor rack. Examiner stated shallow-draft boats had or could be used for access. 7/80 note in file from Hinckley, FDO, says surveyors used boat (size unspecified) on river.
4, 22N9EK	shallow-draft boat, plane, snmb (F)	73 (A)		Suzanne Munchhoff Kowalsky, Fairbanks, F19685, Homesite, 7/77. Gov't contest recommended.
29, 21N8EK	heli (F)	64 (A)	fish, hunt, bp, vogs (A)	Stanley Johnson, Ambler, F964, 6/74. Tent frame, camp, fish racks washed out by erosion.
<u>Unnamed Lake</u> (outlet flows to Ambler River) 22, 22N9EK	plane (F)	73 (A) (F)	home	Michael Schieber, McKinley Park, F19584, Homesite, 7/77. Cabin, cache. Examiner stated access to area near tract possible by shallow-draft boat or canoe up Ambler River. Now USS 6420, lot 2. Patented.
<u>Unnamed Stream</u> (trib. of Ambler River) 3, 22N9EK	foot (F)	73(A)	cabin rental (A)	Donald Kruse, College, F19690, Homesite amended to HQ, interim 8/76. Cabin, cache. Case closed 10/78.
<u>Miluet Creek</u> (trib. of Ambler River) 4, 5, 20N5EK; 32, 21N5EK	boat (A) heli (F)	60 (F 2/75)	camp, bp (F 2/75) hunt, fish, bp (W)	Dora Johnson, Ambler, F17805, 7/74, 2/75. Trail and fire pits.
<u>Kopshesut Creek</u> (trib. of Kobuk River) 35, 20N4EK	heli (F)	65 (F)	bp (F)	Dorothy Cleveland, Ambler, F16793A, 6/74.
35, 36, 20N4EK	foot (A) plane (F)	60 (A) (F)	bp, camp (A) bp, baskets (F)	Bessie Douglas, Ambler, F16795, 6/74.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Hunt River</u> (trib. of Kobuk River) 36, 22N1EK; 31, 22N2EK	boat, snmb (A)	56 (A)	hunt, bp (F)	Raymond Stoney, Kiana, F18107A, 7/79. Examiner stated campsite washed out annually.
36, 22N1EK; 31, 22N2EK; 1, 21N1EK; 6, 21N2EK	boat (A) heli (F)	65 (A)	hunt, bp, camp (A)	Ralph Stoney, Kiana, F17899, 7/79. Examiner stated access could be had by shallow-draft boat during high-water periods.
<u>Akillik River</u> (trib. of Hunt River) 9, 16, 21N2EK	heli (F)	69 (A)	hunt, camp, bp (A)	Margaret Hess Sheldon, Ambler, F16797A, 7/79. Examiner stated access possible by shallow-draft boat.
<u>Napautokik Creek</u> (trib. of Kobuk River) 33, 34, 19N7W; 3, 4, 18N7WK	heli (F)	65 (A) (F)	hunt, trap, bp (A) hunt, trap, wg (F)	Delbert Wells, Jr., Kiana, F18108, 8/74. Appl. deceased. Examiner stated "parcel does not lie on a navigable waterway." Parcel straddles creek.
<u>Squirrel River</u> (trib. of Kobuk River) 17, 18, 21N11WK			hunt, fish, trap, bp (F)	Henry Jackson, Sr., Kiana, F17462B, 4/73. Access is available via river boat in early spring and late fall during high water and skiplane in winter.
2, 20N11WK	boat, snmb (A) heli (F)	57 (F)	fish, camp (F)	Fred Jackson, Noorvik, F14408A, 9/76. Fish cache, cutting table.
1, 2, 20N11WK; 36, 21N11WK; 31, 21N10WK	boat (A) heli (F)	24 (A)(F)	fish, hunt, bp (A)(F)	Mary Brown, Noorvik, F18768, 9/76. Claimed use and occ. same as applicant's birth date.
24, 20N11WK	plane (F)		hunt, fish, bp, trap (F)	Percy Jackson, Sr., Kiana, F16576C, 4/73 and summer 1973.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
24, 20N11WK		44 (A)	hunt, trap, bp, fish (F)	Percy Jackson, Sr., Kiana, F16576B, 11/72. Access to the parcel is available in summer high water and snmb or skiplane in winter.
29, 20N10WK	boat (A)	71 (F)	hunt, fish, trap (A)	Henry Jackson, Sr., Kiana, F17462A, 7/73. Applicant stated he began use when he was 16 years old. There's no DOB. Camped in spring when water was high to get up the river in a boat.
<u>Unnamed Lake</u> (outlet flows to Squirrel River) 2, 3, 21N11WK	dog, snmb (A) heli (F)	51 (A)	hunt, trap (F)	Clifton Jackson, Noorvik, F14214C, 9/76. Camp site, trash, stove, tent poles, dog area on parcel.
<u>Portage Creek</u> 12, 17N8WK	foot, snmb (A) heli (F)		hunt, bp (A)	Malania Nash, Lower Kalskag, F18703C 7/79. Traps, shotgun shells, clearing.
<u>Singauruk River</u> (Flows to Selawik Lake) 22, 16N8WK	snmb (A) heli (F)	56 (A)	hunt, trap (A)	Tony S. Jones, Selawik, F18238A, [80] Cabin in disrepair.
22, 16N8WK	snmb (A) heli (F)	66 (A)	hunt, trap (F)	Lila A. Jones, Selawik, F18237D, 7/80. Cabin in disrepair.
33, 34, 15N9WK	boat, dog (A) heli (F)	53 (F)	fish (F)	William Sheldon, Jr., Selawik, F18906A 7/79. Barrel stove.
<u>Selawik River</u> 33, 13N7EK	walk, heli (A) skip1 (F)	74 (F)	home (F)	James A. Schwarber, F21094, 2/78; 3/79. Homesite. Cabin, log cache, canoe on river.
36, 13N6EK; 31, 13N7EK	boat, snmb, kayak, dog (A) heli (F)	47 (F)	hunt, fish, camp, log (A) hunt, trap, fish, raft meat (F)	Glenn N. Russell, Selawik, F18244A, 7/80. Makes wooden rafts and transports meat to Selawik.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
36, 13N6EK	motor boat, snmb (A) heli (F)	Mid 50s (F)	camp, trap, hunt (F)	Roy A. Smith, Selawik, F19017C, 7/80. Primarily a base camp from which moose and caribou hunts originated until late 1960s.
25, 36, 13N6EK	boat, snmb (A) heli (F)	47 (F)	trap, hunt, fish (F)	Jimmie Russell, Selawik, F17636A, 7/80. Constructs rafts to transport meat and pelts to Selawik.
28, 13N6EK	boat, snmb (A) heli (F)	40 (F)	hunt (F)	Andrew N. Skin, Selawik, F18245B, 7/80.
28, 29, 13N6EK	boat, snmb (A) heli (F)	51 (F)	hunt, trap, fish (F)	Jessie Skin, Selawik, F19015, 7/80.
36, 13N3EK	boat, snmb (A) heli (F)	50s (F)	hunt, camp, fish, trap (F)	Jonas Ballot, Selawik, F18941D, 8/79.
30, 13N3EK	boat, snmb (A) heli (F)	38 (A) 79 (F 83)	hunt, fish, trap, bp (A)(F)	David Greist, Selawik, F19005B, 8/79, 7/83. (F 79) Applicant seems never to have been here; (F 83) Campsite found, "doubted he had used land prior to 1971."
30, 13N3EK	boat, snmb (A) heli (F)	50 (A) 71 (F)		Ella Greist (Ticket), Selawik, F18954B 8/79, 7/83. Site used primarily by her father for hunt, fish, and trap. She has made some use of the land since 1971.
27, 28, 13N2EK	boat, snmb (A) heli (F)		hunt, camp (F)	Andrew N. Skin, Sr., Selawik, F18245C, 7/80.
14, 12N1WK	boat, snmb, dog (A) heli (F)	48 (A)	hunt, trap, bp, camp (A)	Delbert A. Harrison, Selawik, F18232, 7/80. Fire pit, barrel stove.
5, 8, 12N1WK	boat, snmb (A) boat (F)	47 (A)	hunt, fish, trap, bp (A) hunt, fish, bp (F)	Nettie Foxglove, Selawik, F18948, 7/77. Appl. father and grandfather used to camped here. Examiner noted that few Selawik people hunt this area.
1, 2, 11, 12, 12N2WK	boat (A)	44 (A)	hunt, fish, trap, bp	Lora N. Davis, Selawik, F19004, 8/79. Appl. parents used to camp here. Examiner found campsite.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
11, 13N2WK	boat, snmb (A) heli (F)		hunt, trap, fish (F)	Glen N. Russell, F18244C. Appl. base camp for hunting moose and caribou, and trapping mink, muskrat, and beaver. Remnants of old fish rack, kayak frames, sleds, trash and artifacts. Slough crossed parcel.
35, 14N2WK; 2, 13N2WK			bp, trap, fish, hunt (F)	Lloyd S. Davis, Sr., Selawik, F18948A, 7/79.
36, 14N2WK	boat (A)(F)	47 (A)	hunt, fish, trap, bp (A)	Nettie Foxglove, Selawik, F18949A, 7/77. Examiner found 3 sod houses dating back to 1940. Described river as "very shallow, narrow, meandering" and said that boat travel should be done in early spring or during rainy season. William Foster of Selawik was examiner's boatman.
34, 35, 14N2WK	boat, snmb (A); heli (F)	56 (A)(F)	hunt, fish, trap, bp (A)(F)	James Riley, Sr., Selawik, F18928, 7/80.
<u>Tagagawik River</u> (trib. of Selawik River)				
36, 3N2WK	boat, dog, snmb (A)		fish, trap (A)(F)	Jonas Ballot, Selawik, F18941C, 7/83.
24, 5N2WK	snmb (A)	50s (A)	trap (F)	Ralph Ramoth, Sr., Selawik, F18925D, 7/83. Trap, cut stumps, trail.
3, 6N2WK	snmb (A)	50s (A)	trap (F)	Ralph Ramoth, Sr., Selawik, F18925C, 7/83. Tent camp, stove, fuel can, snow machine trail.
2, 3, 6N2WK	snmb (A)		trap (F)	Bert A. Jones, Selawik, F18235, 7/83. Bones, barrel stove and fuel cans.
26, 9N2WK	dog, snmb (A) heli (F)	40 (A)	trap (F)	Charlie K. Mitchell, Selawik, F19010B 7/80. Game trail.
35, 11N2WK	boat, snmb (A) heli (F)	63 (A) 55 (F)	fish, camp, bp, trap (F)	Mary F. Mitchell, Selawik, F19011, 7/80 Use spring, summer and winter. Kayak shell, camping debris, trails, cut wood and cleared site for tent.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
26, 27, 34, 35, 12N2WK	boat, dog, snmb (A) boat (F)	37 (A)(F)	hunt, fish, trap, bp (F)	Ernest K. Loon, Selawik, F19009, 8/79. Appl. deceased. Examiner stated river very shallow. Photo shows small boat with motor. Found cabin and sod house remains. William Foster, boatman, said he used to travel by sled and trap near Loon's camp.
11, 14, 12N2WK	boat, dog, snmb (A) boat (F)	54 (A)	hunt, trap (F)(W)	Harry A. Foster, Selawik, F18967A, 7/79. Barrel stoves, snmb parts, snowshoes. Parcel straddles river.
14, 12N2WK	boat, snmb (A) boat (F)	54 (A) 49 (F)	hunt, trap (F)(W)	Harry A. Foster, Selawik, F18967B, 7/79. Examiner found camp site, trash and 55-gallon drums.
<u>Unnamed Stream</u> (trib. of Tagagawik River)				
21, 28, 10N2WK	boat, snmb, plane (A) heli (F)	45 (A) 60 (F)	hunt, bp (F)	Leon L. Kiana, Kotzebue, F18839, 7/80. Hunt winter and summer. Raised as a child here. Campsite evidence. Appl. born 1945.
21, 10N2WK	boat, snmb, dog (A) heli (F)	48 (A)	fish, hunt, trap, bp (A) hunt, trap, bp (F)	Fred W. Norton, Kotzebue, F18844, 7/80. Stream appears 30' wide in photo.
<u>Unnamed Stream</u> (trib. of Tagagawik River)				
16, 11N2WK	boat, snmb (A) heli (F)		hunt, trap, bp (F)	Harry O. Mitchell, Selawik, F18988B, 7/80. Parcel used as summer and winter camp.
<u>Unnamed Interconnecting Lakes</u> (outlet flows to Tagagawik River)				
7, 8, 17, 18, 11N2WK	snmb (A) heli (F)	50 (F)	camp, trap (F)	Charlie K. Mitchell, Selawik, F19010A, 7/80. Winter use, tent frame and drying racks on parcel.
<u>Kugarak River</u> (trib. of Selawik River)				
25, 36, 17N3EK	dog, snmb (A) heli (F)	65 (F)	camp, hunt, trap (F)	Oscar A. Greist, Ambler, F18004B, 12/74.
12, 15N2EK	boat (A)	30s (F)		Stephen T. Greist, Selawik, F19006B, 7/83. Examiner stated cabin built 1955.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
10, 15, 15N2EK	boat, dog, snmb (A) heli (F)	47 (F)	hunt, fish, trap (F)	Andrew N. Skin, Sr., Selawik, F18245A, 7/80.
7, 15N2EK	boat, snmb (A) heli (F)	47 (F 7/80) 39 (F 7/83)	hunt, trap (F)	Andrew N. Skin, Selawik, F18245D, 7/80, 7/83.
7, 15N2EK	boat, dog, snmb (A) boat (F)	49 (F)	trap, hunt, fish, bp (F)	James Gorham, Selawik, F18958B, 8/79, 7/83. 7/83 examiner noted trail.
12, 15N1EK	snmb (A)		hunt (F)	Larry L. Larkin, Selawik, F18960C, 7/83.
7, 15N2EK; 12, 15N1EK	boat, dogs, snmb (A) heli (F)		hunt, fish, trap, bp (F)	Daniel S. Foster, Selawik, F18833B, 7/79. Sod house, cache, and trail from camp to river.
4, 15N1EK	boat, snmb, dog, rowboat (A) heli (F)		hunt, trap (F)	Arthur E. Skin, Selawik, F18246C, 8/80.
11, 14, 15, 15N1WK	boat, dog, snmb (A) heli (F)	59 (F)	hunt, trap, fish, bp (F)	Warren Ramoth, Selawik, F18926B, 8/79.
36, 14N2WK	boat (F)		camp, fish, bp (F)	May O. Skin, Selawik, F18995C, 7/83.
<u>Unnamed Lake</u> (outlet flows to Kugarak River) 24, 16N2EK	dog, foot (A) heli (F)	49 (A)		Dooley Fish, Selawik, F18843D, 7/79. Appl. said he had been on tract one time. Was not certain of location from air. No improvements.
<u>Ikaqoak River</u> (trib. of Selawik River) 1, 12, 15N55WK	boat (A)	48 (A)	hunt, bp (A)	Lloyd S. Davis, Sr., Selawik, F18948B, 7/79. Camp site, trails, steps cut in bank from boat landing area and fire ring.
14, 15N5WK	boat (A) (F)	30(F)	hunt, bp, trap (F)	Marjorie T. Ticket, Selawik, F18849C, 6/77.



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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Fish River</u> (trib. of Selawik River) 15, 17N5WK	boat, snmb, rowboat, kayak, dog (A) heli (F)		hunt, trap (F)	Paul E. Ballot, Selawik, F18933C, 8/80 Examiner stated access in past was by rowboat, dogsled, and kayaks.
22, 27, 17N5WK	boat, snmb (A) heli (F)		hunt, trap (F)	Paul E. Ballot, Selawik, F18933B, 8/80.
22, 27, 17N5WK	snmb (A) heli (F)			Delbert K. Mitchell, Sr., Selawik, F18962A, 7/79.
34, 35, 17N5WK	boat, snmb (A) heli (F)	65 (A)	hunt, fish, trap, bp, camp (A)	Doris A. Skin, Selawik, F18845, 7/80. Examiner stated appl. never independently used tract.
9, 10, 16N5WK	boat, snmb, dog (A) heli (F)	60 (A)(F)	fish, camp (A) fish, hunt, camp, wg, trap (F)	Grant Ballot, Selawik, F18972, 7/79.
9, 16N5WK	boat, snmb (A) heli (F)	44 (A)	hunt, trap (F)	Ralph Ballot, Selawik, F18942A&B, 8/80
19, 16N5WK	boat (A) heli (F)	60 (A)	fish, hunt (A)	Johnnie E. Ticket, Selawik, F18848, 9/79.
30, 16N5WK	boat, dog (A) heli (F)	13 (A)	fish, trap, hunt (F)	Billy Kolhok, Selawik, F18840, 7/80. Drum stove, camp area, winter trail goes through parcel.
30, 16N5WK	boat, snmb (A) heli (F)	65 (A)(F)	hunt, fish, trap (F)	Johnson M. Norton, Selawik, F18924A&B 8/80.
36, 16N6WK	boat, snmb, dog (A) heli (F)	50 (A)	hunt, fish, wg, bp (A)(F)	Jackie Commack, Selawik, F18921B, 8/79.
6, 15N5WK; 31, 16N5WK; 36, 16N6WK	boat, dog (A) heli (F)	30 (A)(F)	fish, hunt, trap (F)	Minnie Kolhok, Selawik, F18842, 7/80. Campsite, fish storage pits.
1, 2, 11, 12, 15N6WK	boat (F 6/77)	57 (F 6/77)	fish (F 6/77)	Delbert K. Mitchell, Sr., Selawik, F18962B, 6/77, 7/83. Examiner (6/77) stated access also possible by heli and snmb.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Unnamed Stream</u> (trib. of Fish River) 20, 16N6WK	dog, snmb (A) heli (F)	15 (F)	wg (F)	Johnnie K. Foster, F18966A, 7/79.
<u>Unnamed Slough</u> (between Fish River and large unnamed lake; local name Green River) 24, 15N6WK	boat (F)	56 (A)	hunt, trap, fish (F)	Fred Davis, Selawik, F18947B, 6/77. Father said his son went to parcel with family and sometimes with hunting companions. Photo shows boat (20' long ?) used by examiner and narrow slough (60' ?).
<u>Unnamed Stream</u> (trib. of Selawik River) 8, 17, 16N6WK	dog, snmb (A) heli (F)	24 (A) 40 (F)	hunt, fish, trap, bp (A)	Paul E. Ballot, Selawik, F18933A, 7/79. Appl. claims parcel as winter hunting and trapping camp annually from 1940 to 1974 and sporadically since 1974. Also used as summer camp in 1940s.
<u>Unnamed Slough</u> (trib. to Selawik River) 24, 14N6WK	boat (A)(F)		bp (F)	May O. (Skin) Walton, Selawik, F18995B, 7/77. Examiner stated appl. unfamiliar with location. She said had used it since she was small child. Access also possible by heli, flopl, and snmb.
<u>Unnamed Lake</u> (outlet flows to Selawik River) 24, 14N6WK	boat (F)	62 (A)	hunt, fish, trap, bp (F)	May O. Skin, Selawik, F18995A, 7/83. Examiner stated access could be by heli, snmb, or flopl. Outlet was only 3-4 feet deep according to examiner but appl. assured her correctly that it was deep enough to get to parcel.
<u>Oblaron Creek</u> 33, 16N7WK	dog, snmb (A)		hunt, wg (A)	Roy Foxglove, Sr., Selawik, F18963A, 7/79.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
29, 15N7WK	boat (A) (F)	66 (A) (F)	bp, fish, hunt (A)(F)	James H. Davis, Selawik, F18229A, 7/79. Trail to bp area.
<u>Unnamed Creek</u> (trib. of Kuchiak Creek)				
31, 16N7WK	boat, snmb, foot (A)	47 (A)	bp, wg (F)	Andy E. Cleveland, Selawik, F18936A, 8/79.
	heli (F)	40 (F)		
<u>Unnamed Slough</u> (empties to Selawik River in Sec. 6, T. 14 N., R. 7 W., KRM)				
32, 15N7WK	boat, dog, snmb (A)	19 (A)	rndr, trap, bp (F)	Charlie N. Smith, Selawik, F19016A, 7/77. Appl. deceased.
<u>Unnamed Lake</u> (outlet flows to Inland lake)				
4, 5, 12N4WK;	boat (F)	55 (A)	hunt, trap, fish (F)	Eileen C. Fox, Selawik, F18835C, 6/77.
32, 13N4WK		58 (F)		Access could also be obtained by heli, flopl and snmb.
<u>Mangoak River</u>				
24, 11N7WK	snmb, dogs, foot, boat (A)	49 (F)	camp, rndr, hunt, fish, bp (F)	Lawrence A. Gray, Selawik, F18854D, 7/79. Tent frame, meat rack, corral, cabin.
33, 12N7WK	boat, snmb, dogs (A)	63 (A)	hunt, fish, bp, camp (F)	Edward S. Loon, Selawik, F18182A, 7/79. Examiner stated appl. did not know where parcel was.
	boat (F)			
32, 12N7WK	boat, snmb (A)	64 (A)	hunt, bp (A)	Jane G. Jones, Selawik, F19007A, 8/79.
	heli (F)			Portable cabin.
<u>Buckland River</u>				
19, 4N6WK	heli (F)			Willie P. Thomas, Buckland, F15838B, 7/75. Appl. told examiner that he couldn't remember ever being on the parcel. Father picked parcel for him and father used to hunt and trap. Additional access would be snmb, shallow-draft boat and fixed wing aircraft.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
23, 5N8WK	heli (F)	54 (F)	hunt, trap (F)	Marvin Thomas, Buckland, F16835A&D, 7/75. Examiner stated access also possible by shallow-draft riverboat, plane, and snmb.
<u>South Fork Buckland River</u> 1, 3N6WK	heli (F)	72 (F)		Marvin Thomas, Buckland, F16835B, 7/75. Examiner stated access also possible by riverboat, snmb, and plane.
33, 4N6WK	heli (F)	54 (F)	hunt (F)	Marvin Thomas, Buckland, F16835C, 7/75. Examiner stated access also possible by riverboat, snmb or plane. In 1966 timber was rafted down from about 3 bends below parcel.
<u>West Fork Buckland River</u> 29, 30, 2N10WK	heli (F)	30 (A) 20s (F)	rndr, camp, hunt, trap (A)	Tommy Carter, Buckland, F15628, 7/75. Examiner stated additional access available by snmb and plane. Photo shows fork over 20' wide.
8, 2N10WK	heli (F)	55 (A) 58 (F)	trap, hunt (A) (F)	Warren S. Thomas, Buckland, F15699 7/75. Examiner stated applicant once ran out of gas taking riverboat to parcel.
7, 3N9WK	heli (F)	64 (A) 62 (F)	fish, wg, hunt (A) hunt, wg (F)	Evans M. Ballot, Buckland, F15620 7/75. Examiner stated also accessible by "shallow draft riverboat", snmb, and plane. Reindeer corral in ruins.
7, 3N9WK	heli (F)	60s (A)	hunt, camp, wg (F)	Willie P. Thomas, Buckland, F15838A, 7/75. Other access by riverboat and snowmachine.
29, 5N9WK	plane (F)	70 (F)	hunt (F)	D. Barbara Trigg, Nome, F18767B, 6/75. Old log church built and used during occupancy of the village of new site on parcel.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
29, 5N9WK	boat (A) plane (F)	63 (F)	hunt, bp, wg (F)	Grace Washington, Buckland, F15702A, 6/75. Old BIA school, old boat; photo shows boat about 21/2' high at bow, appl. stated it probably was used to bring supplies to school; access also possible by snmb.
29, 5N9WK	boat, plane (A) plane (F 6/75 & 7/83) heli (F 7/75)	66 (A) (F)	hunt, fish, bp (A)	Dorothy B. Isabell, Teller, F16811, 6/75, 7/75, 7/83. Applicant has pram on parcel; photo shows boat about 6' wide and about 14'-15' long.
29, 30, 5N9WK	plane (F 6/75)	62 (A)	hunt (F)	Rita Sage, Buckland, F15692, 6/75, 7/83. Examiner of 7/83 stated boat access by applicant "likely"; examiner of 6/75 stated access possible by "shallow draft water craft" and snmb; ruined cabin.
<u>Kugruk River</u> 25, 36 6N19WK	boat, snmb, dog (A) heli (F)	31 (A) 45 (F)	hunt, fish (F)	James C. Moto, Jr., Deering, F18071, 7/75. Access mainly by snmb; boats and dog team have also been used.
4, 6N19W 33, 7N19WK	boat (F)	30 (A) 49 (F)	hunt, fish (A) camp, fish, bp, hunt (F)	Ageline Moto, Deering, F17660, 7/75. Stated in field exam that this parcel marks the limit of river travel during low water periods on the Kugruk. Formerly cabin on site but has washed away. Applicant leaves boat at site year around.
27, 7N19WK	boat, dog (A) heli (F)	47 (F)	hunt, fish, bp (F)	Paul Jones, Deering, F18612B, 8/75. Applicant deceased (since 1972)
<u>Inmachuk River</u> 16, 17, 7N20WK		65 (A)	bp, fish, picnic (F)	Bertha Olanna, Deering, F17474A, 8/75.
30, 31, 6N21WK	heli (F)	65 (A) (F)	fish, bp, rndr (A)(F)	Alfred K. Karmun, Deering, F13794, 8/75. Tent frames, two cabins, cache, meathouse, outhouse, snowmachine; examiner said that access was possible by road and snowmachine.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Goodhope River</u> 29, 32, 8N24WK	heli (F)	40 (A)	trap, hunt, fish (A) hunt, bp, camp, vogs (F)	Daniel Iyatunguk, Deering, F18610, 8/75. Additional access is available by fixed wing aircraft, shallow draft water craft, and snowmachine.
<u>Devil Mountain Lakes</u> 33, 12N27WK	dog, snmb (A) heli (F)	55 (A)	hunt, fish, camp (F)	Delbert P. Obruk, Shishmaref, F18545A 8/75.
5, 11N27WK		51 (A)	hunt, trap, fish (A)	Zaccheus Wm. Barr, Shishmaref, F65983. Fanny Barr.
<u>White Fish Lake</u> 11, 12, 11N29WK	heli (F)	48 (A)	fish, camp (F)	Frieda Ningeulook, Shishmaref, F18666C, 8/75.
1, 2, 11N29WK	heli (F)		fish, camp (F)	Ardit M. Weyiouana, Shishmaref, F18527C, 8/75.
31, 12N28WK		51 (A)	hunt, trap, fish (A)	Zaccheus Wm. Barr, Shishmaref, F65983A.
<u>Unnamed Stream (flows to Shismaref Inlet)</u> 24, 11N33WK	heli (F)		hunt, trap (F)	Delbart Eningowuk, Shishmaref, F18535A, 9/75.
23, 11N33WK	heli (F)		fish, bp (A) fish, hunt, bp, trap (F)	Frieda Ningeulook, Shishmaref, F18666B, 9/75. Applicant's husband, David Ningeulook, accompanied field examiner to parcel.
<u>Serpentine River</u> 5, 8N31WK	boat (F)	13 (A) 20s (F)	fish, hunt, trap, bp (A)(F)	Charles A. Weyauanna, Shishmaref, F18672B, 8/76. Appl. died in 1971, appl's daughter Susie W. Kokeok, provided information to field examiner.
5, 8N31WK	heli (F)		fish, hunt, bp (F)	Susan Nayokpuk, Anchorage, F189543C, 9/75. Appl. was 27 in 1975 and had used the parcel since she was a child. Parents used land before her.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
5, 6, 8N31WK	boat (A) heli (F)		fish, bp (F)	Frieda Ningeulook, Shishmaref, F18666D, 9/75.
6, 8N31W; 33, 9N31WK	boat, dog (A) heli (F)		hunt, fish, trap (F)	Bert W. Kuzuguk, Shishmaref, F18662B, 9/75.
34, 9N32WK	dog, snmb (A) heli (F)	early 60s (F)	fish (F)	Ralph Sinnok, Shishmaref, F18556C, 8/75. Appl. died in 1971, information provided to field examiner by appl's brother.
34, 9N31WK	dog, snmb (A) heli (F)	00 (A)	fish (F)	Benjamin Kokeok, Shishmaref, F18537A, 9/75. Cabin built by government for reindeer herders; applicant does not appear old enough in photographs to have used parcel in 1900, date possibly refers to use by his family.
33, 34, 9N31WK	snmb (A) heli (F)	65 (F)	fish (F)	Benjamin Kokeok, Shishmaref, F18537B, 9/75.
12, 8N32WK	boat (F)	13 (A) 39 (F)	fish, hunt, trap, bp (A)(F)	Charles A. Weyauvanna, Shishmaref, F18762A, 8/76. Appl. died 1971, daughter Susie W. Kokeok, provided information to field examiner.
34, 35, 9N32WK	boat (A) heli (F)	early 60s (F)	fish, bp (F)	Ralph Sinnok, Shishmaref, F18556D 8/75. Appl. died in 1971.
<u>Grayling Creek</u> (trib. of Serpentine River) 13, 7N31WK	snmb (A) heli (F)	65 (F)	hunt, fish (F)	Tommy Obruk, Shishmaref F18547D, n.d. Applicant said he hunts moose and fished for grayling. He goes there every winter to fish. Examiner noted that creek may be navigable for shallow-draft river boats at high water.
12, 7N31WK	dog (A) heli (F)	65 (F)	hunt, fish (F)	John Sinnok, Shishmaref, F18670B, 9/76. Applicant mainly used parcel to fish grayling and hunt moose. Examiner said parcel accessible by riverboat and snmb.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
2, 11, 7N31WK	boat, dog, snmb (A) heli (F)	65 (F)	fish (F) hunt, fish (W)	James A. Sinnok, F18554B & C, 9/76. Examiner said parcel accessible by riverboat or snmb. Witness statement by appl.
<u>North Fork Serpentine River</u> 27, 34, 8N29WK	dog, snmb (A) heli (F)	25 (A)	trap, hunt (F)	Sergie Obruk, Shishmaref, F18519A 8/75. Shishmaref-Deering winter trail goes through middle of parcel. Applicant comes to parcel several times in the winter.
9, 8N31WK	boat (A) heli (F)		fish, hunt, bp (A)(F)	Ida R. Nayokpuk, Shishmaref, F18663B, 8/75. Campsite with firepit, rocks, tent pegs, and racks. Examiner state applicant had been coming to parcel at least 20 years.
5, 8N31WK	heli (F)	30s (F)	fish (F)	Philip K. Eningowuk, Shishmaref, F18510B, 8/75. Examiner stated that access was also possible by shallow-draft watercraft and snowmachine.
<u>South Fork Serpentine River</u> 17, 8N31WK	boat (A) heli (F)	13 (A) 30 (F)	fish, hunt, bp (F)	Charles A. Weyauvanna, Shishmaref F18672C, 9/76. Appl. deceased, information provided to field examiner by appl's daughter, brother, and wife. Examiner stated: "this parcel lies on a small creek that is perhaps navigable by a small 12 to 16 foot riverboat during high water."
17, 18, 8N31WK	dog, snmb (A) heli (F)	39 (F)	hunt, fish, trap (F)	Vincent Tocktoo, Shishmaref, F16934C, 8/75. Cabin on parcel has fallen into disrepair.
<u>Unnamed Slough</u> (trib. of Serpentine River) 20, 29, 9N31WK	heli (F)	60 (F)	fish, bp (F)	Frieda Ningeulook, Shishmaref, F18666A, 8/75. Tent frame.



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Location	Access	Occ	Use	Remarks
<u>Unnamed Slough</u> (tributary of Serpentine River) 20, 9N31WK	boat (A) heli (F)		hunt, fish, bp (F)	Susan Nayokpuk, Shishmaref, F18543B, 8/75. Lawrence Nayokpuk, appl's father, provided information to field examiner; used since she was a young girl.
<u>Arctic River</u> 7, 8, 7N33WK	boat (A) heli (F)	50 (A) 65 (F)	hunt (F)	John Sinnok, Shishmaref, F18670C, 8/75.
19, 20, 29, 30, 8N33WK	boat (A)(F)	45 (A) 68 (F)	hunt, fish, bp (A)	Henry Ahgupuk, Shishmaref, F18507C, 8/76.
19, 30, 8N33WK	boat (A) heli (F)	55 (F)	fish, hunt (A)(F)	Clifford Weyiouanna, Shishmaref, F18741B, 8/75.
5, 6, 7N33WK	dog, ATV, boat (A) heli (F)	55 (A) 65 (F)	bp, rndr (A) hunt, fish, rndr (F)	Shirley Weyiouanna, Shishmaref F18561, 8/75. Corral, tent pegs, and fire pits. Reindeer corral built 1955.
18, 19 8N33WK	heli (F)		fish, hunt (F)	Loretta Sinnok, Shishmaref, F18523A, 9/75. Tent, fish racks. Examiner states applicant fishes from a boat.
19, 8N33WK	boat (A) heli (F)	29 (F)	hunt, fish, bp (F)	Alex N. Weyiouana, Shishmaref, F18560A, 8/75.
18, 8N33WK	dog (A) heli (F)	59 (A)	hunt, fish (F)	Ralph Sinnok, Shishmaref, F18556B, 9/75. Applicant deceased. Relative said applicant hunted ducks and fished here from September to freeze-up. Examiner found fish rack.
<u>Unnamed Distributary</u> (of Arctic River) 23, 24, 8N34WK	boat (A) heli (F)	41 (A)(F)	hunt, bp, fish (F) hunt, bp, egg gath. (F)	Elsie A. Weyiouanna, Shishmaref, F18742A, 8/75.
24, 8N34WK	boat (A) heli (F)	29 (F)	hunt, bp, egg gath. (F)	Alex N. Weyiouanna, Shishmaref, F18560B, 8/75.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Unnamed Lake</u> (outlet flows to Arctic Lagoon) 8, 9, 16, 17, 8N36WK	dog, snmb (A) heli (F)	61 (F)	trap (F)	Ralph Sinnok, Shishmaref, F18556A 8/75. Appl. died in 1971 at the age of 27. Appl's brother accompanied field examiner.
<u>Tuttle Creek</u> (trib. of Kugrupaga River) 27, 28, 6N37WK	snmb (A) heli (F)	60 (F)	hunt (F)	Delbert P. Obruk, Shishmaref, F18545B, 9/75.
<u>Nuluk River</u> 31, 6N38WK	dog, snmb (A) neli (F)	55 (A)(F)	hunt, fish, trap (A)(F)	Harold Olanna, Shishmaref, F18817, 8/75. Tent frame.
34, 35, 6N39WK	heli (F)	67 (F)	fish, hunt (F)	Albert Olanna, Shishmaref, F18549C, 8/75. Examiner noted that parcel could also be accessed by shallow-draft watercraft, fixed-winged aircraft and snowmachines.
<u>Pinguk River</u> 8, 4N40WK	dog, snmb (A) heli (F)	67 (F)	fish, hunt, trap (F)	Albert Olanna, Shishmaref, F18549A&B, 8/75. Sod house built by applicant's great-grandfather.
<u>Agiapuk River</u> 2, 1S35WK	boat (A) heli (F)	45 (F)	hunt, fish, trap, home (F)	Josephine R. Cannon, Nome, F18297, 8/79. Large cabin, mining equipment, four large abandoned barges. Applicant's son thought barges had been used for freighting supplies from Teller; photo shows one barge to be at least 35' long.
7, 18, 3S34W; 12, 3S35WK	boat (A) (F 8/76) heli (F 7/84)	64 (F 8/76)	hunt, fish (F)	Robert Rock, Brevig Mission, F15771D, 8/76, 7/84. Examiner in 7/84, commented "allotment is as far up the Agiapuk River as a boat normally can get". Examiner in 8/76, stated they ascended river as far as they could in a boat and then walked further up to stake parcel, then placed in 12, 3S35WK. Photo of river at parcel in 8/76 showed sand bar along middle of river.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
17, 18, 19, 20, 3S34WK	boat (A) heli (F)	67 (F)	fish (A)(F)	Kenneth Kakoona, Brevig Mission, F029976C, 8/79. Applicant uses brother's fish camp across Agiapuk River.
20, 3S34WK	boat (F)	56 (F)	fish, hunt, bp (F)	James John Otoyuk, Teller, F12583C, 6/76. Fish racks.
20, 21, 3S34WK	boat (F)	56 (F)	fish, hunt, bp (F)	Isaac Olleasik, Teller, F12584B, 6/76. Tent frame, fish racks, boat landing area. Examiner photo shows applicant's riverboat 14'-20' long with outboard.
<u>Duck Creek</u> 15, 3S34WK	boat (F)		fish, hunt, trap, bp (F)	Isaac Ollasik, Teller, F12584C, 6/76. Cabin and fish trap. Parcel is not on creek. Appl. and examiner must have walked a 100 yds. from creek. Appl. stated he'd used since he was 15; in photo taken in '76 he looks in his 50s.
<u>Salmon Lake</u> 6, 7S31WK		57 (A)	fish (A)	Lillian E. Howard, Nome, F031657. Applicant claimed use between July and September; claimed fish racks and tent floor, 1963.
8, 9, 7S31WK	railroad (A) heli (F)	55 (A)	fish, hunt, bp (A)(F) trap(F)	Agnes W. Pagel, Nome, F16354, 8/79. Applicant fished in the lake using a small boat. When Seward Peninsula RR ceased operation in mid 1950s applicant could no longer conveniently reach parcel.
<u>Tisuk River</u> 8, 17, 6S37WK			rndr (F)	Wilfred J. Kakaruk, Teller, F13053, 8/72. Examiner located parcel on west side of Nome-Teller Road not on river. Cabin on site.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
17, 6S37WK		28 (A)	rndr (F)	Ruth A. Kakaruk, Teller, F13052B, 8/72. Examiner located parcel on west side on Nome-Teller Road tracking river.
<u>Feather River</u> 27, 7S38WK	boat (A) heli (F)	60 (A)(F)	hunt, stopover (A)(F) BP (F)	Gabriel J. Payenna, Nome, F15738, 8/79. Applicant claimed use during May and June for hunting and a stopover when traveling from King Island to Nome by boat.
27, 7S38WK	boat (A) heli (F)	38 (A)	hunt (A)(F) fish (F)	Gabriel L. Muktoyuk, Nome, F15731, 8/79. Applicant used to take small boat from community camp up river to parcel. He tried to take a longer boat but the waves in Wooley Lagoon were "too big" and he could not enter the river. Tract crossed by river.
34, 7S38WK	heli (F)	60 (A)	hunt	Sylvester A. Ayek, Anchorage, F15713, 8/79. Examiner said applicant normally reached land by boat, car, walking and snowmachine; she found no evidence of use.
<u>Sinuk River</u> 4, 5, 8, 9, 9S36WK	truck, snmb (A) truck (F)	62 (A)	hunt, fish (A)(F)	Earl K. Scott, Nome, F16726, 8/77. Applicant told examiner he first came to parcel in 1957 when Nome-Teller Road built. Narrow trail discernable along river bank.
<u>Nome River</u> 11, 11S13WK	car (A)	61 (A) 50 (A)	hunt, fish, bp (A)	Lucie A. Richardson, Nome, F13431A 9/71, 6/77. Applicant reaches land via Old Osborne Road and new road to Dexter. No improvements. 6/77 examiner said allotment was not on navigable body.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Flambeau River</u> 18, 11S31WK	boat, snmb, dog (A) boat (F)	50 (A)	bp (A) hunt, fish, trap (F)	Ralph Olanna, Nome, F13772B, 8/77. Applicant hunted ducks and trapped fox. Allotment primarily used for fishing. Examiner found house (built in 1956), fish racks, cold storage holes.
<u>Eldorado River</u> (trib. of the Flambeau River) 5, 6, 7 11S31WK	boat (A) truck, boat (F)	50 (A) 62 (A)	hunt, fish, trap (A) fish (F)	Ralph Olanna, Nome, F13772A, 8/77. Applicant usually fished for salmon, trout, and whitefish. Examiner found tent frame and fish racks. Photo shows sandy beach.
<u>Fish River</u> 6, 7, 5S21WK	boat, snmb (A) heli. (F)	59 (F)		Steve Pederson, Nome, F17955A, 8/79.
20, 29, 5S21WK	boat (A) heli (F)		hunt, fish (F)	Jacob Ahwinona, Nome, F14397A, 8/79. Applicant born 4/10/23, used parcel since childhood, used on more regular basis since 1949.
25, 5S22WK	boat, aircraft (A) heli(F)	59 (F)	fish, hunt (F)	Martin Olson, Sr., Golovin, F17487A, 8/79. Cabin built in 1976.
27, 5S22WK	boat, walk (A) heli (F)	30s (F)	bp (F)	Martha Apok, White Mountain, F14399A, 8/79. Normal access is by boat up Fish River and then on foot to land amid lakes.
27, 5S22WK	boat, walk (A) heli (F)	54 (A)	hunt, fish, bp (A)	Eloise Ahwinona, Nome, F14396B, 8/79. Relatives picked berries here. Applicant appeared unfamiliar with land. No physical use evidence. Parcel does not abut river.

## Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
3, 10, 6S22WK	boat (A) heli (F)		fish (F)	Jack Ahwinona, Nome, F14397B, 8/79. Parcel straddles Fish River at and below mouth of Pargon River; also straddles Rathlatulik River. It is about 24 miles from Council by boat. Applicant claimed his parents used land in late 1920. Even after moving to Nome, applicant regularly takes boat he has docked at Council up to his brother's Cache Creek Camp.
10, 6S22WK	boat (A) boat, heli (F)	54 (A)	fish (F)	Eloise Ahwinona, Nome, F14396A, 8/79. Examiner found a few tree stumps. Tents, houses, caches, fish racks on Fish River 1/2 mile south of parcel. Photo shows placid river.
10, 6S22WK	boat (A)(F) heli (F)	54 (F)	fish (F)	Eloise Ahwinona, Nome, F14396A, 8/79. Husband has parcel just south of Elosie's; they drive to Council and boat to Cache Creek where they have a tent in summer.
10, 11, 14, 15, 6S22WK	boat (F)	59 (A)	fish (A)	Joseph Kowchee, Sr., White Mountain, F024227, 7/77. Examiner accessed parcel by shallow-draft aluminum boat from bush airstrip 7 miles south of parcel. Site can also be reached by snowmobile or helicopter.
15, 16, 6S22WK	boat, snmb, dog (A) heli (F)	60 (A)	fish (A) (F) hunt, bp, camp (F)	Martha Agloinga, White Mountain, F16502, 8/79.
15, 6S22WK	boat (F)	34 (A)	hunt, fish (A)	Carl M. Ahwinoa, Sr., Nome, F14395, n.d. Examiner accessed parcel by "shallow draft aluminum boat from a bush airstrip", about 7 miles south of parcel; can also be reached in winter by snowmobile, but, because of remoteness, helicopter is preferable. Photo shows wooden boat (pointed bow) at least 16' long.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
15, 6S22WK		30 (F)	fish, trap (F)	Martha Apok, White Mountain, F14399B, 7/77. Applicant's husband said appl. fished there every year for 30 years; hasn't been there since 1974 when they lost boat in a flood. Used primarily as a fish camp; husband also trapped in winter. Fish River navigable at this location, stated examiner.
<u>Lava Creek</u> (trib. of Fish River) 24, 3S21WK	skip1 (A) heli (F)	62 or 63 (F)	hunt, camp (F)	Martin Olson, Sr., Golovin, F17487D, 8/79; applicant used parcel in winter.
<u>Boston Creek</u> (trib. of Fish River) 23, 24, 25, 26, 5S22WK	boat (A) heli (F)	53 (F)	fish (A)(F)	Jack Titus, Nome, F031355, 8/79, appl. deceased; wife, Dora Titus, present during field exam., sod house and cache.
<u>Unnamed Stream</u> (trib. of Fish River) 27, 5S22WK	boat, walk (A) heli (F)	54 (F)	hunt, bp (F)	Eloise Ahwinana Nome, F14396B, 8/79. Parcel located on a right-bank tributary of Fish River. It straddles creek and encompasses 2 ponds. Applicant's great-grandparents use to hunt fowl in fall and berry pick.
<u>Niukluk River</u> 33, 6S25WK	plane, snmb, truck (A) truck (F)	58 (F)	fish, bp, hunt, mining, home, vegs (F)	Steve Pederson, Council, F17955B, 7/74. Applicant has purchased patented mining claims adjacent to parcel. Examiner located house, equipment, fish rack, tin storage shed and fish net. "The Niukluk river is navigable by river boat." Photos show dredge in river.
<u>Clear Creek</u> (trib. of Tubuktulik River) 27, 7S18W	skip1 (A) heli (F)	62 (F)	hunt, soak in hot springs (F)	Martin Olson, Sr., Golovin, F17487B, 8/79.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Koyuk River</u> 15, 16, 21, 22, 4S13WK	boat, snmb (A) heli (F)	66 (A)	fish, hunt, bp (F)	Vera Napayonak, Koyuk, F17913A, 6/75. Stove, shovel and cut trees on campsite.
28, 5S11WK	boat (A) heli (F)	54 (A)	fish, hunt, trap, bp (A)(F)	Clarence W. Douglas, Koyuk, F17841A, 7/75. Examiner said parcel on navigable body. He found old cabin which applicant said belonged to grandfather Big Sam, as well as gill net sites, old fuel drums, and trash.
<u>First Chance Creek</u> (trib. of Koyuk River) 16, 17, 20, 21, 1S16WK	dog (A) heli (F)	30 (A) 21 (F)	hunt, fish (A) hunt, trap (F)	Nora Ahwinona, Nome, F14398, 8/79. Husband's parents lived here. Parents built cabins in 1899, 1930, and 1940. Husband used land from 1921 to 1941 to trap. Examiner found no cabins.
<u>Peace River</u> (trib. of Koyuk River) 14, 23, 3S13WK	tractor, plane (A) tractor (F)	45 (F)	fish, bp, vogs (F)	Sophie Swanson, Nome, F16355, 8/77. Riverboat converted to a summer cabin. Cat trail, tent frame, fish rack.
23, 3S13WK	cat drawn sled (F)	46 (A)	fish, wg (F)	E. Daphne C. Rylander Gustofson, Fairbanks, F8526C, 8/77. Access also possible by walking or heli. Access up Peace River from Koyuk River by boat is not practical due to shallow water.
22, 23, 3S13WK	tractor (F)	46 (A)	fish (A)	Allen Ray Rylander, California, F16171, 8/77. Fish rack, outhouse, skid pond. Parcel can also be accessed by heli, snmb and foot from Haycock.



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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>East Fork Koyuk River</u> 9, 3S10WK	snmb (A) heli (F)	64 (F)	fish, hunt (F)	Abraham Anasogak, Koyuk, F18039A. Field exam was the first time applicant came to parcel in summer.
9, 3S10WK	dog, snmb (A) heli (F)	64 (F)	fish, hunt, camp (F)	Oscar D. Anasugak, Koyuk, F18040A, 7/75. Goes to parcel in winter yearly since 1964.
<u>Inglutalik River</u> 5, 6, 6S9WK	boat, snmb (A)		fish, hunt, bp, trap (F)	Ella D. Kimoktoak, Koyuk, F18651B, 7/75. Trap, old stove and pipe. Began use at least by 1966.
5, 6, 6S9WK	snmb (A) heli (F)		fish, hunt, trap (F)	Edward Kimoktoak, Koyuk, F18114A, 7/75. Applicant lived on parcel as a child and has been coming back here all his life. Trail clearly marked from river mouth to a clearing in the woods where the ruins of his father's cabin were located.
5, 6, 6S9WK		74 (A)	hunt and fish lodge (A)	John W. Elmore, Nome, F2056, T&M. Relinquished.
36, 7S10WK; 1, 8S10WK	heli (F)		hunt, fish, bp (F)	Helga Adams, Koyuk, F18380B, 7/75. Examiner stated it is navigable river.
32, 7S10WK	snmb (A); heli (F)	54 (A)	fish, hunt, trap, bp (F)	Clarence W. Douglas, Koyuk, F17841B, 7/75. Examiner said parcel was on navigable body. Examiner found cabin, which was built c.1940 and owned by grandfather Big Sam. He also found gill net site, duck blinds, etc. Applicant traps for fox, wolf, wolverine, and mink.
3, 8S10WK	boat (A) heli (F)	48 (A) 45 (F)	fish, hunt, bp (A)	Dina Evan, Koyuk, F17914, 7/75. Appli. said parents also camped here. She used summers 1945-59. Examiner said allotment was not on navigable body.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
4, 8S10WK		56 (F)	fish, hunt, trap (F)	Henry Adams, Koyuk, F17941A, 7/75. "Years ago, the applicant said that he had changed the course of the river near its branch in front of his tract by building a small trench." Water no longer flows north; he did this to improve fishing. Photo and sketch map shows area partially dried up. River quite wide.
<u>Ungalik River</u> 8, 9, 11S11WK	heli (F)	60 (F)	fish, bp (F)	Edith Sagoonik, Koyuk, F14570A, 7/75. Applicant raised in Koyuk and moved to Nome in 1960. Returns to allotment each summer with relatives named Okitkon. Examiner found collapsed cache and site of fish rack. Examiner said allotment not on navigable body.
3, 9, 10, 11S11WK	heli (F)	48 (A)	hunt, fish (A) fish, bp (F)	Nick Evan, Nome, F19341, 7/75. Tent frame, fish racks, fire pit, wood pile, and a barrel for smoking fish.
<u>Shaktoolik River</u> 9, 13S11WK	heli (F)	60 (A)	fish (A)(F) bp (F)	Gustoff Sagoonick, Shaktoolik, F19200, 7/75. 2 gill net sites, fish rack, tent poles, firepits. Applicant travels to parcel in summer months.
4, 5, 8, 9, 13S11WK		25 (F)	fish, bp (F)	Simon Bekoalok, Shaktoolik, F11980B, 7/75. Fish rack, ice cellar, smokehouse, and gill net site. "The parcel lies on a navigable waterway."
9, 16, 13S12WK			hunt, trap (F)	Simon Bekoalok, Shaktoolik, F11980A, 6/83. Cabin, tent frame, and cache.
9, 10, 13S12WK	heli (F)	39 (A) 40 (F)	fish, bp, veg (A) fish (W) camping, fish, bp, hunt (F)	Baayin Asicksik, Shaktoolik, F18050, 9/75. Fish rack, old stove.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
9, 10, 15, 16, 13S12WK	heli (F)	58 (A)(F)	wood, fish, bp (A) hunt, trap, fish (F)	Gertrude Sagoonick, Shaktoolik, F18410, 7/75. 2 caches, 2 smokehouses, fishnet, stove, 2 cabins, outhouse, old boats.
18, 13S12WK	boat (A) heli (F)	60 (F)	fish (F)	Edith Sagoonik, Koyuk, F14570B, 7/80. Applicant said she used the summer fish camp only once in 1960. Examiner found cabin, cache, tent frame, fish wheel, boat dock, etc. Winter trail runs through her allotment.
<u>Unalakleet River</u> 18, 18S7WK	boat, snmb (A)	63 (A)	fish, trap (A)	Stanton Oswald Katchatag, Unalakleet, F033683, 9/72. U.S. Survey 5454 7/80, river was meandered. Examiner located fish racks, tent frame, boat, fish net on site. River is both boat and snowmobile access route.
18, 18S7WK	boat, snmb (A)	40 (A)	fish (A)	Emil L. Anagick, Unalakleet, F13483, 8/72. River is both boat and snowmobile access route.
17, 18, 18S8WK		65 (A)	fish, bp (A)	Ruth Koutchak, Unalakleet, F13489, 8/72. Examiner found clearing but not the claimed fish racks or trout site; he noted boat and snowmobile machine access possible.
7, 17, 18, 18S7WK	boat, snmb (A)	61 (A)	fish, hunt (A)	Sheldar I. Kalchatag, Unalakleet, F15046, 9/72. No improvements located. River is both boat and snowmobile access route.
5, 6, 7, 8, 18S7WK			fish (A)	Nick Riley, Unalakleet, F032172, 12/62, statutory life expired with no further action.
6, 7, 18S7WK	boat, snmb (A)	30 (A)	fish, trap (A)	Jack B. Koutchak, Unalakleet, F13488, 9/72. Examiner found fish racks, tent site on parcel. River is both boat and snowmobile access route.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
13, 18S, 8WK; 18, 18S7WK		40 (A)	fish (A)	Emil Anagick, Unalakleet, F13483, 8/72. Examiner stated "River is a boat or snowmachine access route only." Now lot 3, U.S.S. 5453, patented.
13, 18S8WK	boat (F)	60 (A)	fish, hunt (A)	John Grant, Unalakleet, F14457A&B, 9/72. Fish racks, tent frame, smokehouse, partially built cabin. Examiner stated sites are accessible by boat or snmb only. Now lots 1 and 2, USS 5372. 2 boats (one aluminum at least 15' long) with outboards shown on exam photos.
15, 18S8WK				Herbert Panipichuk, Unalakleet, F022361, no field exam.
15, 18S8WK		58 (A)	fish (A)	Edwin Katchatag, Unalakleet, F022360, no field exam.
15, 18S8WK		58 (A)	hunt, fish (A)	Irvin Bahr, Unalakleet, F15044, 9/72. "River is a boat or snowmachine access route only." Now USS 5370, patented.
10, 15, 18S8WK				Eva P. Ryan, Unalakleet, F143718, 8/72. "The river is a boat or snowmachine access route only." Now lot 3, USS 5369.
35, 36, 18S10WK; 1, 2, 19S10WK		64 (A)	hunt, fish, trap, bp (A)	Henrietta Wilson, King Salmon, F13998A, 8/72. Site can be reached by road. Now lot 4, USS 5318.
35, 18S10WK; 2, 19S10WK		64 (A)	hunt, fish, trap, bp (A)	Henrietta Wilson, King Salmon, F13998B, 8/72. Now lot 2, USS 5318, patented.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>North River</u> 15, 16, 18S10WK	snmb (A)	63 (A)	hunt, fish, vogs (A)	Frances Charles, Unalakleet, F14155. Applicant wrote 5/74 that he hauled in material for 16'x20' house by snowmobile in 1971. Applicant mentioned seeing two BLM men in a boat on the North River in 1974.
15, 22, 18S10WK		53 (A)	hunt, fish, bp (A)	Alice V. Anagick, Unalakleet, F17637, 9/72. In a 1974 letter applicant said fish rack was built yearly because water carries it away each spring and fall.
27, 18S10WK		58 (A)	hunt, trap, fish, bp (A)	Martin D. Nanouk, Unalakleet, F15045, 9/72. Applicant did not accompany field examiner; no improvements found.
<u>Unnamed Stream</u> (trib. of North River) 4, 18S10WK		00 (A)		Sophie Nashalook, Nome, F09174. Appl. deceased.
<u>Golsovia River</u> 22, 23, 27, 26S14WK	heli (F)	44 (A)	hunt, trap (A)	Fred Oyoumick, St. Michael, F18302, 6/73. Photo shows bars and minor riffles near confluence of two forks in river. It is gentle hill country and what looks to be the main river may only be 30- to 40-feet wide.
19, 25S13WK	heli (F)	38 (F)	hunt (F)	James M. Lockwood, St. Michael, F18301B, 6/73. Guide, not appl., on field exam and claimed summer and winter hunting.
4, 25S13WK			hunt, camp (A) (F)	Ambrose Otten Sr., St. Michael, F18431A, 6/73. Aerial photo shows river 40 feet wide or more. In a 1974 affidavit, applicant claims to have used the parcel for over 30 years without missing a winter to hunt and camp for a week or two at a time.

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<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
<u>Nunavulnuk River</u> 9, 10, 25S19WK	heli (F)	24 (A) (F) 35 (W)	hunt, wg, fish (W)	Olga A. Aluska, Stebbins, F16219A, 7/73. Examiner identified need for a 25' river bank easement for future public access and possible boat landing.
10, 25S19WK	heli (F)			Leonard Raymond, Stebbins, F16042A, 7/73. Old barabaras, no sign of recent use or occupancy, abandoned tent frames, now lot 1, USS 6487, patented.
<u>Kuiak River</u> 19, 25S19WK	heli (F)	60 (A)	hunt, fish (A)	Joseph O. Washington, Stebbins F16407A, 7/73. Examiner found no physical use evidence; he noted possible boat use of river.
19, 20, 25S19WK	heli (F)	20 (A)	hunt (A)(W) fish (W)	Oswald J. Washington, Stebbins, F16409A, 7/73. Examiner found 3 reindeer herders' cabins; he noted possible boat use of river. Witness said this was old village site.
<u>Kogok River</u> 29, 26S19WK	heli (F)	46 (A)	fish, hunt (A)	Emily B. Hunt, Stebbins, F16376, 7/73. Examiner located camp stove. Photos show river about 20 to 30 feet wide between banks several feet high.
<u>Pikmiktalik River</u> 33, 27S20WK				Alice C. Steve, Stebbins, F16403C, 7/73.
20, 26S20WK	boat (A) heli (F)		hunt, fish (F)	Phillip L. Foxie, Kotlik, F18752B, 6/83. Loghouse, smokehouse, and fish drying racks; examiner stated applicant used this land 30 years previous.

Native Allotments of Northwest Alaska

<u>Location</u>	<u>Access</u>	<u>Occ</u>	<u>Use</u>	<u>Remarks</u>
12, 26S21WK	heli (F)	20 (A)	hunt (A) (W) bp, wg, fish (W)	Oswald J. Washington, Stebbins, F16409B, 6/73. Examiner found no physical use evidence. Witnesses refer to allotment being near "Nun River". Appl. filled out witness statement.
<u>Charley Green Creek</u> 18, 28S21WK		30 (F)		Charlie Steve, Stebbins, F16404A, 6/73. Applicant was not at field exam. Examiner found no evidence of use. A photo shows unbraided creek which appears to be 10 to 20 feet wide at most.





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